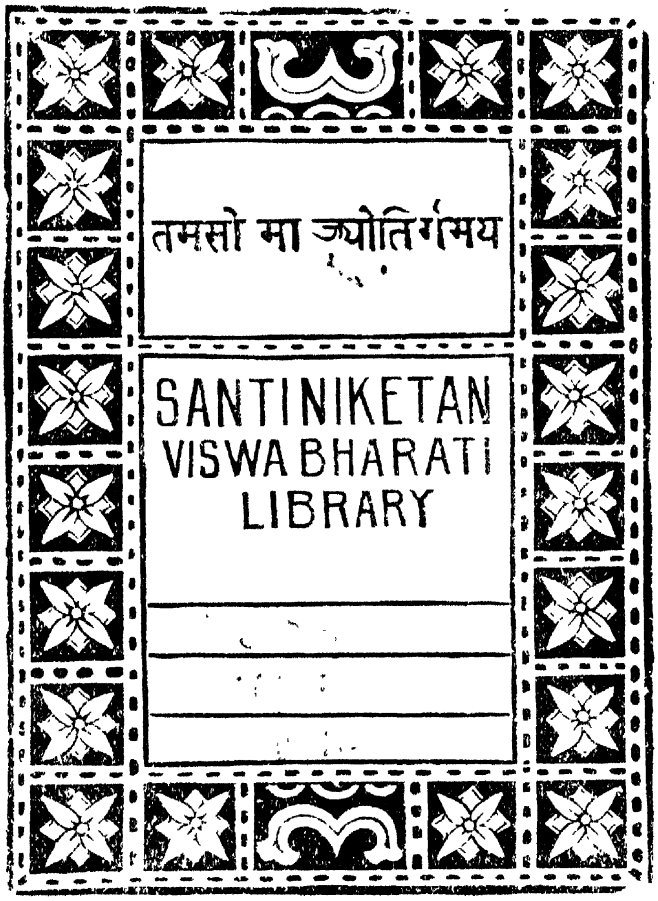

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The
Mysore Economic Journal

A MONTHLY PERIODICAL

Devoted to the Discussion of all Economic Topics of Interest

VOL. XI, 1925

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The Mysore Economic Journal

A Monthly Periodical devoted to the Discussion
of all Economic Topics of Interest

INDEX TO VOL. XI, 1925

Leading Articles.

		PAGE.
1.	The Mysore Economic Journal By the Editor	1
2.	The Administration of Mysore By "Scrutator"	2
3.	The Health-Giving Sea By Ellis Barker	11
4.	Hints on Listening-in By Robert Magill	16
5.	British Industrial Research	17
6.	Indian Debt Redemption	19
7.	Indian Banking	20
8.	Industries in the United Provinces, 1923 24	21
9.	Artificial Silk and Silk Manufactures	22
10.	Industries in the Punjab, 1923 24	24
11.	Mineral Production in the Central Provinces, 1923	25
12.	Co-operation in Bulgaria	26
13.	Post-Graduate Studies in Bombay	28
14.	Mysore Coffee Cess Bill By A. R. Banerji, Esq., C.S.I., C.I.E.	30
15.	Hurricanes and Coconuts	31
16.	The Indian Economic Position By Lallubhai Samaldas, C.I.E.	49
17.	Survey of the Textile Fibres of the Empire	56
18.	Burma's Industrial Finance By "Sentinel"	59
19.	The German Export Campaign	62
20.	Agriculture in Burma By "Son of the Soil"	64
21.	Medical Relief in Rural Bombay	67
22.	Gifted Children in Industry	68
23.	World's Agriculture	75
24.	The Indian Budget, 1925 26	91
25.	The Exchange Problem By A. S. Venkataraman, B.A., I.E.S.	94
26.	Population Problems from the Indian Census By J. A. Marten, M.A., I.C.S.	97
27.	Non-Brahmans and Intelligence By Dr. M. V. Gopalsami, B.A., Ph.D. (Lond.)	101
28.	The Economic Condition of Soviet Russia By S. V. Ayyar, M.A.	103
29.	India's Railway Budget By Sir Charles Innes	105
30.	Is There a Cure for Leprosy? By Edwin Muir	116
31.	The External Capital Committee	117
32.	Indian Mineral Production in 1923	119
33.	From Our Readers	138
34.	Journalism in India By the Editor	139
35.	Krishnarajasagara Dam	141
36.	Co-operation in Mysore By Mir Hamza Husein, B.A., B.L.	144
37.	The Restoration of the Gold Standard By the Right Hon. R. McKenna	147
38.	The Bombay Labour Office and its Work	154
39.	Joint Stock Companies and Managing Agents By the Editor	157
40.	Education's New Phase	160
41.	The Imperial Forestry Institute	161
42.	Civic Life and Education	164
43.	Co-operative Movement in Bombay	165
44.	India's Gold Purchases	168
45.	World's Agriculture	179
46.	Secondary School Education	180
47.	Madras since the British Conquest—I By the Editor	183
48.	Railways in India, 1923 24	189
49.	Manganese in Central Provinces	191
50.	Finance of Local Bodies in Bombay	194
51.	Motor Cars in India	195
52.	Financing of Branch Railway Lines	197
53.	Helping the Hand-Loom Weaver	201
54.	Managing Men By Frank B. Grace	202
55.	The World's Agriculture	216
56.	Indian Economic Enquiry Committee	227
57.	Madras since the British Conquest II By the Editor	231
58.	Land Mortgage Banks for Madras By the Editor	237
59.	American Inflation and its Relation to Europe By Virgil Jordan	242
60.	Education in Britain By Cyril Norwood	243
61.	Industries in the Central Provinces, 1924	246
62.	Japanese Duties and Rebates on Cotton	247
63.	Wireless in India	250
64.	Manufacture of Artificial Silk	251
65.	Water Power in the Empire	253
66.	Branch Railway Policy	254
67.	The British Empire Exhibition, 1925	263
68.	Death of Lord Leverhulme	265
69.	Backward Classes and Government Service	280
70.	Madras since the British Conquest—III By the Editor	281
71.	The Capital Surplus in the United States By Virgil Jordan	287
72.	Education in Bombay By "Academicus"	289
73.	The Madura Saurashtra Community—I (Indian Economic Studies) By K.R.R. Sastry, M.A., F.R.Econ.S. (Lond.)	291
74.	Iron Works at Bhadravati By Rao Bahadur S. Srinivasa Iyengar	297
75.	Proposed Insurance Legislation By "Insurance Expert"	301
76.	Andhra University Bill By "Academicus"	302

PAGE.

77. The World Forestry Congress at Rome .. 303
78. Economic Outlook in the United States .. 325
By Francis H. Sisson
79. Indian Problems—A Review 326
By "I.C.S."
80. Building Co-operative Societies 327
By the Editor
81. Madras since the British Conquest—IV .. 328
By the Editor
82. The Madura Saurashtra Community—II (Indian Economic Studies) 333
By K. R. R. Sastry, M.A., F.R.Econ.S. (Lond.)
83. Dietetic Value of Rice 340
By "Son of the Soil"
84. United Provinces' Industries 341
By "Scrutator"
85. Education of Intermediate and Backward Classes 344
By "Academicus"
86. Punjab Board of Economic Inquiry .. 346
87. Trade Depression and Unemployment .. 347
88. Indian Paper Industry 355
89. The New Military Policy of the United States 375
By Virgil Jordan
90. The Madura Saurashtra Community—III (Indian Economic Studies) 377
By K. R. R. Sastry, M.A., F.R.Econ.S. (Lond.)
91. Indian Currency Commission .. . 384
By A. S. Venkataraman, B.A., L.T.
92. The Andhra University Bill . .. 386
By S. Subbarama Aiyar, M.A.
93. The Textile Trade in India 387
By Rt. Hon. Thomas Shaw, C.B.E., M.P.
94. Bombay University Reform .. 391
By "Academicus"
95. Indian Farm Economics . . 394
By N. N. Gangulee, D.Sc.
96. Ryot's Forests in Madras . 396
By "Son of the Soil"
97. Life Assurance without Medical Examination 400
98. External Capital Committee—I .. 415
By S. Subbarama Aiyar, M.A., Dip. Econ.
99. External Capital Committee—II .. 417
By A. S. Venkataraman, B.A.
100. The Madura Saurashtra Community—IV. (Indian Economic Studies) 419
By K. R. R. Sastry, M.A., F.R.Econ.S. (Lond.)
101. Expansion of American Automobile Industry 422
By Virgil Jordan
102. Indian Mercantile Marine 424
By N. J. Shah, Ph.D. (London), F.S.S.
103. Realities of Rural India .. . 427
By N. N. Gangulee, D.Sc.
104. Education in Bombay Presidency 429
By "Academicus"

PAGE.

105. Tea Culture in Assam 432
By "Son of the Soil"
106. The Trade Union Congress 434
By B. Shiva Rao
107. Colonial Economic Policy . . 436
108. The Royal Agricultural Show . 445
109. Mr. Sarojini Naidu—A Sketch . .. 452
110. Condition of Rubber Industry in United States 461
By Francis H. Sisson
111. 'Then and Now'—A Review . . 463
By A. S. Venkataraman, B.A.
112. Agriculture in Madras, 1924-25 465
By "Son of the Soil"
113. Rural Education in Bombay .. 467
By "Academicus"
114. Some Biological Methods of Insect Pest Control . . 468
By Christopher Hay, M.A.
115. A Railway Rates Tribunal for India .. 485
116. A Prosperous Life Company . . 487
117. Indian Economic Enquiry Committee Report 495
By A. S. Venkataraman, B.A.
118. The Electrical Industry of the United States 497
By Francis H. Sisson,
119. Education in the United Provinces . 498
By "Academicus"
120. Co-operation in Bihar, 1924 . .. 501
By "The Bystander"
121. Bombay's Sea-Borne Trade . . 503
By Christopher Hay, M.A.
122. Agriculture in Bombay 505
By "Son of the Soil"
123. A Note on the Application of Zoning to Bangalore City . . 506
By T. Ramachandra Rao, B.A., A.C.E.
124. Co-operative Farming in Sind . . 508
By Pritamdas Hukumatrai Shahani
125. Contemporary Studies—A Review 519
By C. Hayavadana Rao, B.A., B.L.

Economics in the West 33, 70, 125, 172, 217, 255, 304, 356, 407, 447, 477, 510
Canadian Trade and Finance 73, 132, 169, 221, 261, 309, 472
Foreign Economic Notes 39, 81, 208, 366, 410
Industrial Notes from the West .. . 266
Indian Economic Notes 44, 76, 176, 204, 270 312, 363, 451
The Mysore Economic Conference 275, 491, 515
Miscellaneous Notes 23—38, 93, 131, 143 167, 188 203, 249, 316, 319—323, 370, 372 374, 390 411, 437, 522
Books in Brief 47 48, 86, 136 138, 181, 224, 279, 413, 454, 490, 523
Acknowledgments .. 48, 279, 414
Topics in the Journals 48, 88
Notes from U.S.A. 307, 359, 401, 442, 474, 514

Detailed Contents.

	PAGE
ECONOMIC ENQUIRY COMMITTEE REPORT— *By A. S. Venkataraman, B.A.*	.. 1
MADRAS FOREST PANCHAYATS— *By "The Bystander"*	.. 4
INDIAN MINERAL PRODUCTION IN 1924— *By Christopher Hay, M.A.*	.. 6
MUSLIM EDUCATION IN BOMBAY— *By "Academicus"*	.. 13
MARKETING OF MANGOES— *By "Son of the Soil"*	.. 14
AIMS OF AMERICAN AGRICULTURAL POLICY— *By "Scrutator"*	.. 16
RICINUS COMMUNIS IN BAHIA AND BRAZIL— *By George M. Chard, of Bahia*	.. 17
PHILADELPHIA EXHIBITION	.. 19
ECONOMICS IN THE WEST	.. 21
NOTES FROM U.S.A.	.. 25
CANADIAN TRADE AND FINANCE	.. 27
FOREIGN ECONOMIC NOTES	.. 30
INDIAN ECONOMIC NOTES	.. 35
CONTEMPORARY STUDIES—A REVIEW— *By C. Hayavadana Rao, B.A., B.L.*	.. 37
BOOKS IN BRIEF	
India's Exchange Problem	.. 39
Lotuses of the Mahayana	.. 40
The World's Living Religions	.. 40
Home Craft and Mother Craft in India	.. 40
MISCELLANEOUS NOTES—	
Education in the Army	.. 24
The Viceroy Designate	.. 34
ACKNOWLEDGMENTS	.. 40
ADVERTISEMENTS—	

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Economic Enquiry Committee Report.

By A. S. Venkataraman, B.A.

Being invited by the Editor to express my views on the Economic Enquiry Committee Report, I gladly undertake to do it. Into the origin of the Committee, it is unnecessary for me to enter for the well-known reason that the popular demand for an economic enquiry became so strong that the Government was at last obliged to yield to the constitution of a committee on 22nd January 1925 with the following terms of reference:

"To examine the material at present available for framing an estimate of the economic condition of the various classes of the people of British India; to report on its adequacy, and to make recommendations as to the best manner in which it may be supplemented, and as to the lines on which a general economic survey should be carried out, with an estimate of the expenditure involved in giving effect to such recommendations."

I am disposed to think that there are few people who deny the value of an economic survey. If they do, they are fit to be transported to the ante-diluvian days long before the king who undertook census operations in his own way by ordering all his subjects to gather with children on a hill-top each with a pin. Well and truly has it been said: "The nation which studies the drift of events as it is revealed by statistical analysis will be infinitely better equipped to take advantage of its opportunities than another which perhaps trusts only to the methods of empiricism." On the importance of statistics for the future of a country, one statistician remarks: "Statistics are not merely a record of what has been but are of use in planning what shall be; it is the duty of a statistical bureau to assist directly in the day-to-day problems of administration as well as to provide their theoretic back-ground. One of the most significant of recent developments in administration is the extent to which statistical organization has been increased as a guide to national policy." Much may be quoted and more may be written to emphasize the importance of statistics as the corner-stone, the basic organization in the intelligent direction of national affairs. It must be admitted on all hands that if an active economic policy is the duty of the State, an accurate knowledge in a statistical form is an indispensable equipment. As a test of the country's progress from day to day and as a guide to future policy, statistics are of supreme value and a highly developed statistical organization, is, as I will take it, a true measure of the country's substantial progress. At the same time it supplies a criterion of comparison with foreign and more advanced countries, even though the comparison may not run on all fours.

If, as it is said, statistics are of invaluable assistance, though not entirely infallible as a guide, what is the nature of available material at present? The existing material being classified under three heads, the statistics other than Production, as for example, finance, trade, transport, commerce, education, vital statistics, migration are said to be complete, while those relating to agriculture, pasture, forests, fisheries, minerals, large and small scale industries, are, if satisfactory in some respects, wanting in others. The crowning feature is the absence of figures relating to income, wealth, cost of living, indebtedness, wages and prices.

With regard to the Estimates of Income and Wealth, it will be readily agreed that excepting the non-official estimates, very few as they are, some of them little better than statistical charlatanism, and the monographs published here and there by officials and private persons, as in Bombay (working classes), in Assam (Labour) village studies in Bombay, Bengal, Madras and the Punjab excepting those spasmodic and fitful attempts, there are no official, authoritative records to command universal acceptance. Data with a

view to distribution of income according to occupations and classes, and of income showing the percentage of population are conspicuous by their absence. The cost of Living Index Numbers, successful as they are, in some cases, where they have been gathered (*vide* monographs referred to) the results have not been of any great use, as they have not been made in sufficient numbers and as the sources of information have not been quite reliable, the people being mostly illiterate. Again, the wage census figures, which are available, are also defective, as pointed out by the Committee. They do not embrace a large number of villages, the rates reported are between too wide a range, the classification of rural and urban workers is not comprehensive enough, the frequency of employment does not find a place, while the unit of time recorded for wages is not uniform. According to the Committee, the tests are Income, National Income (aggregate or per capita), Individual Wealth, National Wealth. Prof. Burnett-Hurst holds that the money value of the income of a family is no true index of its economic condition, the other factors being the strength of the family, the variations in the purchasing power of money, indebtedness, that the compilation of National Dividend is largely an academic exercise, that comparisons between India and European countries based on figures per head are vitiated by the entirely different economic conditions, that the idea of enquiries into individual wealth may at present be abandoned, that estimates of National Wealth in foreign countries have been made by non-officials, that a statement of comparative living in various countries is necessary to arrive at a true test of National Wealth. In fact, according to him, nothing except "Family" income constitutes a suitable test of the economic condition of the various classes of people, while the best criterion of the economic condition of a family is its standard of living. It will be seen that the Professor assumes the role of a Statistician and Economist, and with what results, it will be judged.

Making their recommendations, under each head as to the extent and manner in which the existing material may be supplemented by improving the statistical data, the Committee propose a sifting of the economic fabric of the country by means of a survey which would include an effective organization, a continuously functioning staff and *rules and instructions* based *on foreign experience as adapted to local conditions*. (Italics mine.) With regard to the classifications of Population, they consider that the statistics of income, wealth, cost of living should be collected for the 12 occupational classes and recommend that the distribution by occupation or calling should be further sub-divided according to income under seven grades or standards.

Indeed in the scheme of Economic Survey outlined by the Committee, there are fundamental differences of opinion between the Committee and Prof. Burnett-Hurst. Prof. Burnett-Hurst makes a fetish of statistics and that with a vengeance. His objective would be to ascertain facts without any immediate end or result in view, "not so much for administrative purposes as for general information and economic analysis". Either he will have intensive studies on various subjects or nothing at all. While even conceding that Production may be ascertained by a statistical organization, all intensive studies, according to the Professor, in regard to the tests such as income or wealth, should be solely under the supervision of an *ad hoc* Provincial Board of Economic Enquiry of the type of the Punjab Board. Prof. Burnett-Hurst proposes the village as the unit of study and advocates the collection of family budgets by the intensive method. Not content with a mere investigation into income, wealth, expenditure and indebtedness, he demands a full description of economic and social life, physical conditions, agricultural methods, cost of cultivation, irrigation facilities, village industry, social customs, prevalence of disease, sanitation and education, credit facilities, local administration, transport facilities, the effects of diseases (economic in the widest sense of the term) and what not! One wonders whither all this leads to and *cui bono?* Prof. Burnett-Hurst is a statistician with a vengeance and wants an investigation on his own terms or nothing at all. His aim is perhaps to provide an unending series of data and that, at a great expense, since honorary correspondents may not be had in large numbers and since on that account, an agency has to be provided for at a great cost.

And if, at such a cost, the statistics are to be gathered merely "for economic analysis and more general information," and not for purposes of proper administration of the country's resources, we wonder whether his thesis is not destructive of the role he assumes.

While we cannot but appreciate the importance of intensive studies, and wish to aim at the maximum of accuracy, we should thoroughly endorse the views of the Com-

mittee, so that we may follow the example of the Dominions in preparing estimates and obtaining approximate figures by generalization where strict accuracy is not possible of attainment. Truly "we should not refuse the guidance which approximate figures may give, because we are unable to obtain strictly accurate figures for a long time." Where mathematical accuracy is impossible of achievement even in countries with a highly developed form of statistical organization, are we alone to wait till that time which may not come at all! The Committee rightly points out that, of the schedules issued to honorary correspondents in the advanced countries, inferences are drawn from as many schedules as are received in time, only 25 to 50 % of the total! The ideal of course for us must be a reliable approximation.

While we should attach great importance to intensive studies in the past for ascertaining income, wealth, indebtedness, such enquiries are too elaborate for our purpose, *viz.*, ascertaining the general economic condition of the various classes of people and the causes of their poverty or prosperity. The intensive studies should according to the Committee comprise enquiries into facts concerning the following in every household, income, expenditure, wealth, indebtedness. An investigation should keep a group of 12 villages under his observation and investigation for a whole year and submit a report of the results. A similar scheme should be pursued for urban areas. The publication of results from time to time will provide the basis for generalization. The selection of villages must be made carefully. Special investigations may be undertaken for acute problems like fragmentation of holdings, unemployment in the clerical classes, etc. Apart from intensive investigation, the Committee also recommends the preparation by the inventory method of collective private wealth and national wealth. Wages statistics should be furnished by the respective departments. The co-ordination and centralization of statistics is a very important thing. Statistics partly departmental and partly economic should come under the technical guidance of the central statistical authority.

With regard to organization and agency, the Committee recommends the creation of a Central Bureau for India (and a Provincial Bureau in each Province) for purposes of periodical census, annual collection of statistics, collation, tabulation and summarization of information. It shall also be their duty to publish a Year Book, to supply statistical information to Government and to undertake special enquiries on behalf of the Government. Now and then advisory bodies should be associated with the officers charged with the work of economic survey. The establishment of a Provincial Board of Economic Enquiry is also advocated with the Provincial Statistician as member and his Personal Assistant as Secretary. The Provincial Statistician should have besides a Personal Assistant as many as 5 or 6 assistants in each Province, each with a small office establishment.

Two distinct agencies for collecting economic data in each district are to be employed, one inspection under the Tahsildar for each taluk for collecting statistics of production, other than agriculture, forests, mines and industries, 3 investigators (one for urban investigation, two for rural investigation) in each district for collecting data on income, wages, cost of living, etc., each investigator to collect data of 4% of the urban population for one year in a city like Lahore and of 2½% of the rural tracts in one year. The Provincial Statistician is to generalize when statistics relating to 5% of the population are available.

Here again on the agency for the collection of data, Professor Burnett-Hurst does not share the opinion of his colleagues. He does not conceal his contempt of the revenue agency, wishes there were honorary correspondents as there are in foreign countries, and emphasizes that investigators selected, should be of the right type. We need not quarrel with Prof. Burnett-Hurst in his last recommendation, *viz.*, the right type of an investigation at a remuneration rising from Rs. 200. I should think that he should be a graduate in economics whose knowledge is ever fresh. He should not be a raw youth from a college. He should have an intimate knowledge of the current economic problems.

This short contribution cannot be better concluded than with the striking of the main key-note to the success of the scheme. India desires statistical information, comprehensive and reliable enough for purposes of an analysis of the economic condition of the various classes of people and capable of serving as a guide to national policy, but not as comprehensive and reliable a scale, as Prof. Burnett-Hurst would have it, mathematically and hence perfectly accurate (that is only a visionary scheme) for general information and mere economic analysis. The elaborate scheme of the Professor is out of place, if the investigation is to be a mere academic exercise.

Madras Forest Panchayats.

By "The Bystander".

The Report on the working of Forest Panchayats for the quarter ending 31st March 1925, is a brief and business-like statement of work done by the Officer in charge of Forest Panchayats in Madras. He was on tour for 75 days in the districts of Chittoor, Cuddapah, Guntur and Chingleput against 55 in the previous quarter. Altogether, 63 panchayats were inspected by him against 49 in the previous quarter. Forty-one new panchayats were organized in the quarter. This large volume of work was rendered possible by the use of a motor car. He has inspected almost all the panchayat reserves in the eleven districts in his charge except some of Kistna, Bellary and Trichinopoly. The Collector of Cuddapah inspected in his company two panchayats. He took a few Tahsildars to show them how the panchayats were working. Only four panchayats in the Cuddapah district were found in the course of his inspection to be working unsatisfactorily and they were reconstituted. One panchayat of North Arcot district found bad in his inspection in the previous quarter was also reconstituted in the quarter. Owing to the formation of panchayats for all the reserves available in the Chingleput district it was possible to abolish the Forest District from 1st April 1925.

The touring and the work of the Inspectors seem to have been fair. The average number of days of Inspectors' tour comes to 77 and the average number of panchayats inspected 39, against 68 and 30 respectively of the previous quarter. In spite of strenuous work, it has not been possible for them to inspect each area once in a quarter on account of their heavy jurisdiction. The salient features noticed in the course of inspection are—the better protection of the areas, the ryots' sense of ownership in the forests entrusted to them, the regular maintenance of watchers and their work, the attempt to limit cattle to the number required for agricultural and dairy purposes and wherever possible to close grazing grounds at the beginning of the season for the better growth of pasture, and above all the improvement of the area by fresh tree-growth, repair of cattle pounds, removal of noxious growth and such like. Besides, the problem of reconciling the interests of the caste ryots and the depressed classes in the matter of assignments of lands to the latter is being slowly solved by the people themselves on being urged by the special staff about its necessity in the economic interests of the country. Two panchayats in North Arcot district—Eraiyurmalai and Nedungunam, one of Chingleput (Vandalur) and another of South Arcot (Nangur) may be cited as examples to prove the willingness of the caste ryots in having set apart portions of reserves for assignment to the depressed classes. As a result of the deliberations of the Conference of Divisional Officers and himself with the Collector of Chingleput district each forest area in that district is being examined by the special staff to see if any portion can be disafforested for assignment, after sufficient grazing ground is reserved for the necessary local cattle including cows and buffaloes necessary for dairy purposes. One other noticeable feature is the reduction of goats all over and the fall in their price. Everywhere, panchayats are coaxing ryots to exchange goats for sheep. A striking example may be seen in the Vadakkupattu panchayat in Chingleput district. It had impounded some goats browsing in the reserve. The person responsible not having admitted the offence was prosecuted and he had been contesting the case. At his inspection, the panchayat officer met the accused and when he heard from him the disadvantages of goat-owning, he agreed to sell them at once and only wanted that the case pending against him should be withdrawn. The panchayat was agreeable to the proposal and the matter was taken to the notice of the Revenue Divisional Officer and he was also pleased to order the withdrawal of the case. Thus; the extermination of goats has been earnestly started by the ryots and the officer hopes that before long the panchayat areas will be completely immune from goats.

Statement II of the appendix shows the lines of working of panchayats. An area of 985 square miles is in their charge and an aggregate assessment of Rs. 57,233 is being paid for them annually. The average rate of assessment per acre comes to one anna and five pies. The rate varies from eight pies per acre in the Kistna district to five annas and seven pies in the Coimbatore district. The lower rates are in force generally in the Ceded districts of Chittoor, Cuddapah and Bellary. It is nine pies per acre in the first two districts and one anna in the last-named district where some panchayats had reduction of assessment recently. In the

other districts except Coimbatore, the rates vary from one anna and seven pies to three annas and two pies per acre. The rate of assessment in Coimbatore may appear high, but it is to be remembered that cattle are much valued in that district and pay much higher grazing rates commensurate with the value for pastures; besides villagers have no complaint. One panchayat (Kongampalaiyam) was working at a loss and it was recently given a remission of assessment by Rs. 77. It may be mentioned here that in fixing the assessment for the panchayats organized by the special staff, the old rule of basing the assessment on the average grazing revenue has not been followed, but the assessment offered by panchayats, according to their capacity with reference to individual budgets, is being accepted. Whenever necessary, assessments were reduced both for old and the new panchayats.

All the panchayats excepting a small minority have been entertaining watchers on suitable pay to patrol the area and have been getting satisfactory work done by them. The Officer, we note, has specially verified this fact bearing in mind the not infrequent criticisms against rural honesty. On the average, each watcher has been looking after about 1½ square miles. He is also satisfied that, as a rule, they are regularly paid and that they work with contentment and some enthusiasm.

People have apparently realized the advantage of limiting cattle according to the capacity of the reserve as the figures in Statement II testify. The average grazing incidence for the eleven districts works out to 2¼ acres per cow-unit. Generally, it is 2 to 2½ acres per cow-unit. Guntur alone shows a high incidence of 1½ acres. The incidence of grazing is not a mere theory and that panchayats have been putting it into practice. There has been little fraud over it. As a matter of fact a number of panchayats have exceeded the grazing limit fixed in their agreement and they have been honest in bringing to account, except rarely, the excess number of cattle allowed. As regards the rates of grazing, they vary from 1½ annas per cow-unit in Cuddapah to Rs. 3 in the Coimbatore district. Generally they are on a par with the rates in force in the Forest Department. The rates have been fixed by the villagers a little lower than the departmental grazing rates only in the case of panchayats managing unreserves, and occasionally in a few old panchayats for reserves. The latter are slowly realizing the advantages of levying higher grazing fee. The grazing rate in the Coimbatore district naturally follows the value attached to cattle and pasture by the people, and also the better pasture available in the district. Of the 507 panchayats now in existence managing 985 square miles only 54 per cent of the panchayats have asked for manure leaf coupes aggregating to an area of 141 square miles, *i.e.*, 15 per cent of the entire extent of reserves, though expert opinion would allow them 25 to 33 per cent of the area by rotation every year. The area of 141 square miles asked for is only 32 per cent of the proportionate entire area of the 54 per cent of the panchayats above referred to. Fuel and timber coupes are much less in demand and limited to 32 panchayats with an area of 1,500 acres, *i.e.*, about 2½ square miles. These facts would show that the ryots have been generally moderate in their demands and that they are anxious to preserve trees and foliage as much as possible.

Statement III of the appendix shows that 151 panchayats have reported 417 offences in the quarter against 175 panchayats that reported 457 offences in the previous quarter. The fall is small and calls for no remarks. The number of offences compounded has, however, risen from 181 to 316 and correspondingly the composition fee realized from Rs. 2,889 to Rs. 5,037. These statistics would show that panchayatdars do not spare their own brethren erring and protect the areas by frequent patrol.

Statement IV of the appendix shows that 261 panchayats, *i.e.*, more than 50 per cent, are working on sound lines and only 82 panchayats, *i.e.*, 16 per cent, are indifferent against 11 per cent shown in the last quarter. The indifferent panchayats have slightly increased in the Ceded Districts of Chittoor Cuddapah and Bellary. This is solely due to the very large areas under the charge of Panchayat Inspectors and to their inability to devote adequate attention to them. The Panchayat Officer's apprehension about the possible degeneration of the work for want of adequate establishment was expressed in his previous quarterly report, and any further delay in the sanction of the additional establishment asked for may result in further deterioration. Panchayats require continued attention for at least two or three years at the outset till they are settled on sound lines before they can be trusted to do the work without much supervision.

Panchayats have been, as usual, progressing in the improvement of reserves by planting trees, sinking or repairing of cattle ponds and removing rank growth. Their progress in plantation is most encouraging in spite of the

adverse season they were experiencing till lately. Statement V of the appendix shows that at the end of the quarter 196 panchayats have brought up 55.733 trees alive against 171 panchayats having 12.194 trees at the end of the previous quarter. The short progressive advance in the number of panchayats is surely not due to their apathy in planting trees but to the withering away of plants in spite of all attempts to water and to provide shade for them. One panchayat of Kandadu in South Arcot district has raised a large plantation of casuarine at a cost of Rs. 105–5–0. Thirty-five panchayats have spent about Rs. 1.592 in the repair of existing ponds and in the sinking of new ponds for cattle drinking against 19 panchayats that spent Rs. 777 in the last quarter. Eleven panchayats have removed prickly-pear at a cost of Rs. 124–8–0 against 9 at a cost of Rs. 339 in the previous quarter. One panchayat of North Arcot has improved its village cart-track at a small cost of Rs. 9.

Statement II of the appendix shows that 226 out of 507 panchayats have accumulated savings of about Rs. 23.350 with an average of Rs. 103 for each panchayat. This is a most satisfactory feature. Twenty-one panchayats have a large surplus of over Rs. 250.

The panchayats feel that they should maintain a reserve fund to meet the charges or assessment, watchers' pay and improvements to the area necessary at least for one coming year. Many of the panchayats have also expressed the view that they should have a further reserve to maintain themselves in years of bad season when they will have to reduce the grazing rates and in a second similar year when they think they would be called upon to throw open the area to free grazing as is done in reserves under departmental management. They also represent that in a second bad year they would move Government to help them by reducing the assessment or foregoing it as the circumstances of each case require. It is with such expectation that one panchayat of Guntur district (Seetharamapuram) was willing to have its assessment raised by about Rs. 100 for the current year as it has the largest surplus. The Forest Panchayat Officer deserves to be congratulated on the good work he has done during the period under review. The work is encouraging to a degree and deserves to be extended more widely than now.

Indian Mineral Production in 1924.

By Christopher Hay, M.A.

The Report on the Mineral Production of India during 1924, by Mr. L. Leigh Fermor, O.B.E., D.Sc., A.R.S.M., F.G.S., M.Inst.M.M., Officiating Director, Geological Survey of India, is replete with useful information. The number of mineral concessions granted during the year amounted to 769 against 624 in the preceding year ; of these one was an exploring license, 654 were prospecting licenses and 114 were mining leases. In spite of an increase in production of about 2,400 tons in Baluchistan, there was a total decrease during 1921 of over 9,000 tons in the production* of chromite in India, due to a decreased output of over 11,000 tons from Mysore.

There was an increase during the year of about 1,520,000 tons, or about 7.7 per cent, in the output of coal. This increase was largely due to Bengal, Bihar and Orissa and the Central Provinces, with a substantial increase in the case of Central India. There was a small decrease in the outturn from Hyderabad and Baluchistan. The increase in Bengal was from the Raniganj field, and in Bihar and Orissa mainly from the Jharia and the Bokaro fields, with also a substantial increase from Giridih. The increase in the Central Provinces was mainly due to the Pench Valley, where the increase was 37 per cent. and to a small extent to Ballarpur, whilst there was a moderate decrease in the output from Mohpani. The increase in Central India was to a small extent due to a partial recovery in the Umaria field from the decline recorded for several years past, but was, in the main, due to a large increase (64 per cent) in the Sohagpur coalfield, the production of which surpassed that of Umaria for the first time. Production in the Sohagpur field dates only from 1921. The decline in Hyderabad is shared by both the Sasti and Singareni fields. No production was recorded from the new Loi-an field of Burma. Amongst the Tertiary coalfields, substantial increases are recorded from the Jhelum and Mianwali coalfields of the Punjab, and a large percentage increase, over 20 per cent,

* The total production of chromite in India was 45,462 tons against 54,242 tons in 1923.

from the Bikanir State in Rajputana; whilst small decreases are recorded from the coalfields of Baluchistan.

The total value of the coal produced rose from Rs. 14,60,59,747 (£9,737,316) in 1923 to Rs. 14,96,60,304 (£10,766,928) in 1924, owing to the larger total production. But in the majority of fields, there was a slight decrease in the pit's mouth value per ton of coal. The decrease varied from as little as 1 pie per ton in Central India to as much as Rs. 1-4-5 in the Punjab; the decrease in the coalfields of Bengal averaged Rs. 1-0-10, in Bihar and Orissa Rs. 0-1-10, and in the Central Provinces Rs. 0-9-2. On the other hand there were trivial increases in value in Assam and Rajputana, with an increase of Rs. 0-15-10 in Baluchistan and the very large increase of Rs. 8-10-6 in Burma. This last increase is presumably due to the cessation of extraction in the Loi-an field.

The total output for 1924 of 21,176,606 tons is, in fact, the greatest yet recorded for this country in any year with the exception of 1919, when the production was 22,628,037 tons.

The export statistics for coal and coke during 1924 show an increase of nearly 70,000 tons to 206,483 tons, a figure still only one-quarter of the pre-war average. In addition the imports fell from 624,918 tons to 463,716 tons, a total nearly one-third of that for 1922, and very close to the pre-war average. As before the exports were mainly to Ceylon, whereas the imports were derived chiefly from South Africa, the United Kingdom and Australia, imports from all sources showing a decline.

Taking 1 ton of coke as equivalent to 2 tons of coal, the net amount of coal available for consumption in India during 1924 was 21,465,673 tons. This is higher than the figure for any previous year except 1919, the total for which was 22,168,495 tons. The closing stocks (2,913,028 tons) in British India at the end of 1924 were, however, only 283,836 tons greater than at the end of 1923. Nevertheless, the fundamental fact of the coal situation in India is that the total capacity of production of the Indian coal mines is now considerably in excess of total demands for internal consumption and for export. This over-production, either actual or potential, has led to severe depression in the coal industry by the beginning of 1925 with heavy falls in the price of coal and the closure of many mines. The decreased export trade referred to in the previous paragraph is partly responsible for this position, and consequently the Government of India appointed in September, 1924, a committee to enquire and report on what measures could be taken to resuscitate this trade. The most important recommendations in the report of the committee † appear to be those devised to ensure that the quality of Indian coal as exported shall reach certain guaranteed standards, for no freight or other concessions of a financial nature will be of avail, if the quality of coal as exported is below anticipated standards.

The average number of persons employed in the coalfields during the year showed a slight increase over the figures for 1923, whilst the average output per person showed a considerable improvement from 97.8 tons in 1923 to 103.5 tons during the year under review; the figure for 1919 was 111.05 tons. The number of deaths by accident was considerably less than in the preceding year, and was, in fact, equal to the average figure for the quinquennial period 1919-23, *viz.*, 274. The corresponding death-rate was 1.34 per thousand persons employed, the figure for the preceding year 1923 being 1.81 per thousand.

The suspension of the operations of the Cape Copper Company in 1923 recorded in the previous Review continued during 1924. In the Review for 1923, references are made to the results of the prospecting operations of the Cordoba Copper Company, prospecting also on the Singhbhum Copper Belt. In 1924 this company was reconstructed as the Indian Copper Corporation, Ltd., with a capital of £225,000. This new company has acquired not only the properties of the Cordoba Copper Company, but also those of the North Anantapur Gold Mines, Ltd., lying immediately to the north, and the property in Kharsawan prospected by the Oroegum Gold Mining Company of India, Ltd.

All work is at present being concentrated upon the Mosaboni area, where a vertical depth of 385 feet has been reached and where 328,840 tons of ore of the average contents of 4.04 per cent of copper had been developed by the end of April, 1925. The erection of concentrating and smelting plant is shortly being started, and the production stage should be reached in about two years' time.

It will be judged from the above that there was no production of copper-ore to be reported in Singhbhum for the year 1924. In Burma, however, the production of 2,935 tons of copper-matte, valued at Rs. 15,94,527 (£114,714 at £1=Rs. 13.9), was reported by the Burma Corporation, Ltd., in the Northern Shan States. There was also a small production of 38 tons

† Report of the Indian Coal Committee, 1925.

of copper-ore, valued at Rs. 1,140 (£82), in the Southern Shan States.

The output of diamonds from Central India amounted to 66.6 carats, valued at Rs. 27,596 (£1,985), against 115.22 carats, valued at Rs. 46,495 (£3,100), in the preceding year.

The total gold production for the year 1923 was recorded in the previous Review as 422,306.56 ozs., valued at £1,702,642. Of this total quantity only the output of Anantapur and the gold recovered from cyanide slags on the Kolar gold field of Mysore was returned in terms of fine gold. With effect from 1924, however, the whole of the output of the Kolar gold mines is being recorded in terms of fine gold; consequently, the output for 1923 has been modified by substituting for the figure of 419,667.64 ozs. of gold won in Kolar the figure of 381,058.93 ozs. of fine gold contained therein. Comparing these two years it is now found that the total output of gold in 1923 was 383,697.85 ozs., valued at £1,702,642, rising in 1924 to 396,351.103 ozs., valued at £1,827,433. This improved result was due partly to an increased production from the Anantapur district resulting from the treatment of the payable ore of the Jibutil (Anantapur) Gold Mines, Ltd., in the reduction works of the Anantapur Gold Mines, Ltd., which company had ceased to mill its own ore. But the greater part of the increase was due to an increased outturn from the Kolar mines. It is of interest to record that encouraging results were being obtained from the bottom levels of several of these mines, particularly Champion Reef and Ooregum, the latter of which has now reached a depth of over 6,000 feet vertical from the surface.

The production of iron-ore increased by 76 per cent, *viz.*, from 821,053 tons in 1923 to 1,445,313 tons in 1924. The production recorded for Mayurbhanj State represents the production by the Tata Iron and Steel Co., Ltd., whilst of that recorded against Singhbhum 138,939 tons were produced by the Indian Iron and Steel Company and the balance by the Bengal Iron Company.

The large increase in the production of iron-ore by the Tata Iron and Steel Company in Mayurbhanj State is reflected in the figures of production at Jamshedpur, where the output increased from 392,135 tons of pig-iron in 1923 to 540,140 tons in 1924; the production of ferro-manganese rose from 3,506 tons in 1923 to 8,951 tons in 1924; the production of steel including rails rose from 151,097 tons in 1923 to 218,472 tons in 1924. The production of the Bengal Iron Co., Ltd., rose from 119,669 tons of pig-iron in 1923 to 147,733 tons in 1924; but the production of iron castings fell from 41,849 tons in 1923 to 27,045 tons in 1924. The production of the Indian Iron and Steel Company rose from 77,980 tons of pig-iron in 1923 to 168,249 tons in 1924. No ferro-manganese was produced by either the Bengal Iron Company or the Indian Iron and Steel Company. The production of pig-iron at the Mysore Iron Works at Bhadravati rose from 9,732 tons in 1923, the initial year of production, to 16,425 tons in 1924. The total production of pig-iron in India rose, therefore, from 599,516 tons in 1923 to 872,547 tons in 1924. A portion of this output was, of course, utilized in the production of steel at Jamshedpur, but a large portion was exported: an export market for Indian pig-iron is, indeed, necessary for the continued success of the industry, in view of the fact that the total blast-furnace capacity of the country is much in excess of the steel-melting capacity and the internal requirements of India for iron castings. It is of interest, therefore, to record the data relating to pig-iron exports from India during the years 1923-24 and 1924-25. The exports in 1924-25 were 86 per cent above those of the previous year, but the export value fell slightly from Rs. 69.8 (£4.65) per ton to Rs. 63.5 (£4.57) per ton.

In spite of this increased production of pig-iron and steel, the years 1923 and 1924 were not prosperous ones for the Indian iron and steel industry owing to a world-wide slump in the iron and steel trade. For this reason the conditions of the industry were investigated by the Indian Tariff Board and a measure of protection introduced for steel in 1924. As already recorded the pig-iron section of the industry found an outlet for increased production in increased exports. The prices at which it has proved possible to land cargoes of Indian pig-iron at United States ports have led to complaints from American producers and anti-dumping notices are said to have been issued against certain cargoes of Indian pig.

In the Central Provinces the number of indigenous furnaces in operation rose from 119 in 1923 to 229 in 1924.

The output of iron ore in Burma is by the Burma Corporation, Ltd., for use as a flux for lead smelting.

There was a further fall in the output of jadeite in Burma from 3,626.6 cwts., valued at Rs. 8,20,120 (£54,675), in 1923 to 2,630.42 cwts., valued at Rs. 8,60,493 (£61,906), in 1924. As in the previous year, the decrease in quantity extracted has not been accompanied by a

corresponding fall in total value due no doubt, to the higher quality of jadeite met with. The output figures are, however, always incomplete, and usually a better view of the extent of the jadeite industry is obtainable from the export figures, which decreased from 3,088 cwts., valued at Rs. 8,37,052 (£55,803), in 1923-24 to 2,766 cwts., valued at Rs. 7,06,800 (£50,849), in 1924-25.

There was a further increase of about 42,000 tons in the production of lead-ore at the Bawdwin mines, and the total amount of metal extracted increased from 46,060 tons, valued at Rs. 1,68,18,111 (£1,121,207), in 1923 to 50,559 tons of lead and 1,200 tons of antimonial lead, valued at Rs. 2,35,07,040 (£1,691,154), in 1924. The quantity of silver extracted from Bawdwin ores rose from 4,843,939 ozs., valued at Rs. 1,01,16,985 (£674,466) to 5,287,711 ozs., valued at Rs. 1,12,26,868 (£807,688). The value of the lead extracted increased from Rs. 365 (£24.4) per ton in 1923 to Rs. 459 (£33.0) per ton in the year under review and that of silver increased from Rs. 2–1–5 (33.4*d*.) to Rs. 2–1–11½ (36.6*d*.). The capacity of the refinery has been increased so that it is now capable of producing over 5,000 tons of refined lead and 500,000 ozs. of silver monthly.

The output of manganese-ore in India rose, again, from 695,055 tons, valued at £2,172,544 f. o. b. Indian ports, during 1923, to 803,006 tons, valued at £2,719,949 f. o. b. Indian ports, during 1924. The figures of quantity have been exceeded only in two previous years, *viz*., 1907 and 1913, when the productions were respectively 902,291 tons and 815,047 tons, whilst the figures of value have been exceeded only in 1920, when the value was £3,523,625. The localities chiefly responsible for the increase in production were Keonjhar State in Bihar and Orissa, the Panch Mahals in Bombay, the Balaghat and Nagpur districts in the Central Provinces, Sandur State and Vizagapatam in Madras, and the Shimoga district in Mysore. In addition the Jhabua State in Central India resumed production after a break of several years and a small initial production was recorded from the Kurnool district in Madras. On the other hand, decreases in production were recorded from Gangpur State in Bihar and Orissa, Chhota Udaipur State in Bombay, the Bhandara district in the Central Provinces and the Mysore district in Mysore. This increased production may be attributed to the continuance of a satisfactory price for manganese which rose from an average figure of 21.2*d*. per unit in 1923 to 22.9*d*. per unit in 1924, for first-grade manganese-ore c. i. f. United Kingdom ports. Producers were, in fact, straining every nerve to comply with demands.

The exports of manganese-ore during the year showed, however, a fall of about 100,000 tons. This fall does not, however, indicate any decrease in the activity of the industry. The high export figures for 1922 and 1923 were much in excess of the quantities produced during those years and were rendered possible only by an encroachment upon stocks accumulated during previous years. There is a steady consumption of manganese-ore at the works of the three Indian iron and steel companies, not only for use in the steel furnaces of the Tata Iron and Steel Company and the manufacture of ferro-manganese, but also for addition to the blast-furnace charge in the manufacture of pig-iron. The receipts of manganese-ore at the iron and steel works during 1924 were 27,333 tons, the consumption in the industry was 35,238 tons, and the stocks in hand at the end of the year were 21,106 tons. The difference of a little over 50,000 tons between the quantity of manganese-ore produced in India during 1924 and the quantity exported is thus partly accounted for by internal consumption. There was a substantial increase in the exports of manganese-ore to Belgium and the United States, a heavy decrease in the quantity exported to the United Kingdom, and a moderate decrease in the amount exported to France.

The technical press has contained during the past few months many references to the negotiations between an American group of financiers and the Soviet Government for the exploitation of the manganese-ores of the Caucasus on up-to-date lines. According to recent information, the agreement has now been definitely signed. It is difficult to estimate exactly what effect will be produced upon the market for manganese-ore when the American group have been able to introduce the proposed improvements: and it is perhaps dangerous to make any prediction. It must be pointed out, however, that the total consumption of manganese-ore in the world is still below the figure to which it had risen just before the outbreak of the late war, and it may be suggested with caution that at least a portion of the proposed increase in output from the Caucasus may be required in connection with any resumption of prosperity in the iron and steel industry of the world, and that the whole of the balance will not be at the expense of

Indian producers. A fall in price seems, however, inevitable.

There was an increase of some 7,000 cwts. in the declared output of mica in 1924 above that of the previous year. As has been frequently pointed out, the output figures are incomplete, and a better idea of the size of the industry is obtained from the export figures. The export figures in 1924 exceeded, in fact, the reported production by over 71 per cent. amounting to 70,095 cwts., valued at Rs. 94,49,168 (£679,796), which, in quantity, is less, and, in value, more than the figures for 1923, *viz.*, 83.296 cwts., valued at Rs. 80,76,552 (£538,435). The average price of the mica exported rose, therefore, from Rs. 97 (£6.5) per cwt. to Rs. 135 (£9.7) per cwt.

There was a further recovery in the output of monazite in Travancore from 246.3 tons, valued at £3,697 in 1923, to 622.3 tons, valued at £9,301.5 in the year under review.

The peak of production of petroleum in India (including Burma) was reached in 1919 and 1921, since when there has been a small but definite fall in production to a figure of nearly 294¼ million gallons in 1923 As the total production for 1924 was a little over 294½ million gallons, the decline appears for the moment to have been arrested. Such coincidence of output for two successive years must, however, be regarded as fortuitous, as the total is made up of the production of a large number of fields, some of which record decreases and some increases. During 1924, the Yenangyaung field showed an increase of nearly 6½ million gallons in contrast to the decrease of 4½ million gallons recorded in the previous year. The production shown includes an output of nearly 2½ million gallons from hand-dug wells. There was also a substantial increase of over two million gallons in the output from the Digboi field. Apart from a trivial increase in the Upper Chindwin, all the other fields showed a decline, which was most serious in the case of Singu, amounting roughly to 7½ million gallons. Less serious decreases were shown by the Badarpur field in Assam and the Minbu, Thayetmyo and Yenangyat fields in Burma, whilst the Attock field, in contrast to the heavy increase of nearly 4½ million gallons in 1923, showed a small decline.

In the Yenangyaung field, the exploitation of the shallow oil-sands has continued, and the attention to this hitherto neglected source of supply is delaying the inevitable decline in production from this field. As the recorded figures of production are the nett figures after deduction of quantities of oil used as fuel on the field, the electrification of the field, which has now reached the present limit of practicability, is another factor tending to delay this decline.

The set-back in production in the Attock district is due to the decline in the output from the older wells being greater than the supplies added by new wells. To remedy this, drilling is being conducted with increased activity on the Khaur field, to which the plant, in operation at Dhulian has also been transferred, the test boring at Dhulian having thus been suspended at 3,284 feet from the surface.

The rupee value of the output in 1924 was almost identical with that of 1923, but, owing to the higher sterling value of the rupee in the later year, the sterling value of the production showed an increase of over £550,000.

There was again an increase in the imports of kerosene oil, the increase being nearly 8 million gallons. This increase is the balance of some 17 million gallons total increase in the imports from the United States of America and Georgia and of decreases or complete cessation of imports from Borneo, Russia, the Straits Settlements and Sumatra.

Imports of fuel oils into India show an increase from 72 million gallons in 1923 to 89 million gallons in 1924 of a total value of Rs. 1,82,89,909 (£1,315,821).

During 1924, the exports* of paraffin wax increased by nearly 5,000 tons, in contrast to the decrease of over 3,000 tons recorded in the previous year.

In continuation of the decrease in the output from the Mogok ruby mines, there was a still more serious fall in 1924 to the very small figure of 101,097 carats, or less than half the average annual quantity produced during the two preceding quinquennial periods. This decline was shared by all the three stones, rubies, sapphires and spinels. The fall in the total value was not, however, proportionate to the fall in weight, as the average value per carat of the three stones taken together rose from Rs. 3.9 (£0.26) in 1923 to Rs. 4.8 (£0.34) in 1925.

The continual increase in the production† of salt since 1921 was checked in the year under review, when there was a fall to the extent of over 157,000 tons, all the major producing areas contributing to this fall with the exception of Aden, which showed an increase of about 10,000 tons.

* 29,407 tons of paraffin wax were exported from India in 1924.

† The total production of salt in India during 1924 was 1,623,475 tons against 1,781,155·9 tons in the preceding year.

The total decrease includes a decrease in the output of rock-salt amounting to some 18,000 tons. There was an increase in the imports of salt amounting to some 87,000 tons, this increase being due largely to increased imports from Egypt and Aden set off only partly by decreases in the imports from the United Kingdom, Germany, Spain and Italian East Africa.

There was in 1924 again a decrease in the total output of saltpetre in India, but only a trival one ; for a considerable decrease in the output from the United Provinces was balanced by a roughly equivalent increase in the outputs from the Punjab and Bihar. The total Indian production amounted to 8,543 tons, valued at Rs. 25,34,037 (£182,305), in 1924, against 8,716 tons, valued at Rs. 22,92,834 (£152,856), in 1923. On the other hand, there was a slight increase in the exports of saltpetre from 8,068 tons in 1923 to 8,385 tons in the year under review, the decreases in the quantities exported to Mauritius, the Straits Settlements, and the United Kingdom, being more than set off by increases in the exports to Ceylon and Hongkong.

There was a further increase in the output of silver from Bawdwin amounting to 444,000 ounces. Small increases were also shown in the production from the Kolar and Anantapur Gold Mines. The total Indian production was 5,309,203 ounces, valued at Rs. 1,12,71,086 (£810,869).

In contrast to the previous year, there was a small decrease in the production of tin-ore amounting to 43½ tons. The total production of 1,963 tons was derived from Burma, Tavoy contributing 73.0 per cent and Mergui 26.5 per cent, the small balance coming from Amherst and Thaton. There was no recorded output of block tin. The imports of unwrought tin were practically the same ; at 48,474 cwts. in 1924 as in the previous year ; 93.4 per cent of these imports came from the Straits Settlements.

The production of wolfram decreased considerably from 872 tons, valued at Rs. 4,79,693 (£31,979), in 1923 to 739 tons, valued at Rs. 3,41,381 (£24,559). Practically the whole of the output was derived from the Tavoy district.

18,650 tons of zinc concentrates were produced by the Burma Corporation, Ltd., in the Northern Shan States during the year under review. The exports of these concentrates during the year amounted to 15,192 tons, valued at Rs. 11,60,449 (£83,486). During the year the mill flow sheet of this Company was modified to permit of the production of a marketable zinc concentrate, and an increased output is to be anticipated during 1925.

There was again a large decrease in the production of alum in the Mainwali district of the Punjab, for the output in 1924 amounted to only 926.5 cwts., valued at Rs. 18,900 (£1,359), as against 3,456 cwts., valued at Rs. 64,472 (£4,298), in 1923.

The production of amber in Burma rose from 47.9 cwts., valued at Rs. 13,720 (£950), in 1923 to 89.3 cwts., valued at Rs. 15,301 (£1,101), in the year under review.

The output of apatite and phosphate-rock in Singhbhum rose from 4,762 tons, valued at Rs. 80,820 (£5,388), in 1923 to 6,426 tons, valued at Rs. 68,004 (£4,892), in 1924.

In 1923, the production of asbestos in India amounted to 247 tons, valued at Rs. 9,880 (£659), obtained in the Hassan district of Mysore State. The production for 1924 was only 125.3 tons, valued at Rs. 18,826 (£1,354), and derived from Seraikala State in Singhbhum, Bhandara district in the Central Provinces, and the Cuddapah district of Madras.

The output of barytes from the Kurnool district of Madras and Alwar State of Rajputana fell from a total of 2,507 tons, valued at Rs. 42,749 (£2,850), in 1923 to 2,303 tons, valued at Rs. 31,341 (£2,255). Of this total 783 tons, valued at Rs. 11,341, came from Kurnool, and the balance, 1,520 tons, valued at Rs. 20,000, from the Alwar State.

There was a very large increase in the output of bauxite, from 6,547 tons, valued at Rs. 55,233 (£3,682), in 1923 to a total of 23,228 tons, valued at Rs. 1,88,075 (£13,531), this total being made up of 19,738 tons, valued at Rs. 1,77,640, produced by the Shivarajpur Syndicate, Limited, in the Kaira district, Bombay Presidency, and 3,490 tons, valued at Rs. 10,435, produced by the Katni Cement and Industrial Company, Limited, in the Jubbulpore district.

0.71 cwt. of bismuth-ore, valued at Rs. 240 (£17), was produced in the Tavoy district during 1924 presumably as a bye-product in the extraction of wolfram.

The total estimated value of building stone and road-metal produced in the year under consideration was Rs. 1,01,90,326 (£733,117). The total increase in value is over 43 per cent. The recorded output of building materials and road-metal now stands 7th in value amongst the Indian minerals. By far the most important item amongst the building materials, and the item for which the most complete returns are available, is limestone and kankar including dolomite, of which the total produc-

tion during the year under review was 1,851,455 tons, valued at £265,657. Attempts are being made to ascertain whether in future the figures of production of limestone can be sub-divided according to use, whether for fluxing in the steel industry, for the manufacture of cement, or for general building purposes.

The recorded production of clay fell from 148,112 tons, valued at Rs. 3,20,333 (£21,356), in 1923 to 122,972 tons, valued at Rs. 3,49,979 (£25,178), in 1924. The decrease in quantity was more than offset by an increase in value.

There was an enormous fall in the total production of fuller's earth from 27,696 tons, valued at Rs. 57,168 (£3,811), in 1923 to 4,078 tons, valued at Rs. 16,027 (£1,153), in 1924; this is mainly due to a fall in the production from Jodhpur State from 27,500 tons in 1923 to only 1,070 tons in 1924, balanced slightly by a considerable production from Mysore.

The mineral hitherto reported from Bikaner State in Rajputana as "sweet lime", the vernacular name for gypsum, had been found on examination to be deposited limestone, slightly tufaceous with a little sulphate. This statement proved to be erroneous, and was based upon an unfortunate laboratory error, but, in consequence of it, the production figures for 1923 were only about one-fourth of the true figures. The production of gypsum has fallen slightly from 39,297 tons, valued at Rs. 74,168 (£4,944), in 1923 to 38,123 tons, valued at Rs. 76,838 (£5,527), in the year under review. A portion of the gypsum from Jamsar in Bikaner State is exported to South Bihar for use as a manure, for which purpose it is commonly applied to the extent of two maunds per acre.

The output of ilmenite from Travancore State fell from 700 tons, valued at £2,100, in 1923 to 641 tons, valued at £1,381, in 1924.

There was a recorded output of 224 tons of kyanite, valued at Rs. 3,360 (£242), in the Kharsawan State (Singhbhum) in 1924. This kyanite was doubtless obtained from Lopso Hill and was extracted for use as a refractory material.

The total production of ochre in 1924 amounted to 6,304 tons, valued at Rs. 66,719 (£4,800), against 9,107 tons, valued at Rs. 67,142 (£4,476), in the preceding year. In spite of the decrease in the quantity of ochre produced there was, however, a slight increase in total value.

There was a production of 1.8 tons of serpentine, valued at Rs. 75 (£5.4), in the Ladak tahsil, Kashmir State, during 1924.

There was an increase in the production of soda in the Ladak tahsil, Kashmir, from about 7 tons, valued at Rs. 249 (£17), in 1923 to 11.8 tons, valued at Rs. 430 (£31), in the year under review. Salt, consisting for the greater part of sodium carbonate, sodium bicarbonate and sodium chloride, is obtained by evaporation from the waters of the Lonar Lake in the Buldana district of the Central Provinces. It is known under the general name of *trona* or *urao*, for which there is no suitable equivalent in English. The total amount of *trona* extracted in 1924 was 20 tons, valued at Rs. 800 (£58), as against 600 tons, valued at Rs. 23,750 (£1,583), in 1923. There was also a production of 3.4 tons of crude soda (*rasi*), valued at Rs. 92 (£7), in Datia State, Central India.

There was a great fall in the production of steatite from 7,023 tons, valued at Rs. 81,558 (£5,437), in 1923 to 2,852 tons, valued at Rs. 69,177 (£4,977), in 1924.

The production of zircon in the Travancore State rose from 145 tons, valued at £1,160, in 1923 to 365 tons, valued at £2,717, in 1924.

Under orders recently issued by the Government of Bombay the Laboratory at Parel will, in future, be designated "The Haffkine Institute" and the Officer in charge will be called "Director, Haffkine Institute". The Bombay Bacteriological Laboratory was first started in 1896 by Mr. Haffkine for the preparation of his Plague Prophylactic and it was then housed in a small building in Byculla. The work rapidly increased and in 1899 it was moved to its present location in Old Government House and was thenceforth known as the Plague Research Laboratory. Later on in 1905 the work of a Provincial Laboratory was added to that of plague research and in the following year the name was changed to 'The Bombay Bacteriological Laboratory' to indicate its wider activities. Since that date its activities have outgrown its present designation, for in addition to plague research and its functions as the diagnostic laboratory for the Presidency, it now includes an Anti-rabic Unit, a Biochemical Unit, and a Pharmacological Unit for the study of indigenous drugs. Since Haffkine started it in 1896 over 25 million doses of his plague prophylactic have been issued; and it has been thought right that the enormous benefits conferred on India by this great scientist should be acknowledged by associating his name with the Institute he founded, thus following the precedent of the 'Pasteur Institues' in various parts of the world and the 'Lister Institute' in London.

Muslim Education in Bombay.

By "Academicus".

A pamphlet has been issued by the Director of Public Instruction dealing with the progress of Muslim education in the Bombay Presidency in the past 10 years. The note points out that conditions in the Presidency Proper differ from those of Sind. In the Presidency Muslims constitute only 8½ per cent of the population: they are widely scattered and claim to be taught in a language other than the local vernacular. In Sind, on the other hand, they form 73 per cent of the population—in rural areas nearly 80 per cent—and they speak Sindhi. The Muslims in the Presidency are, as a whole, far more advanced in education than those in Sind.

The pamphlet reviews the progress made under

(*a*) Primary Education
(*b*) Secondary education
(*c*) Collegiate education

separately for the Presidency Proper and for Sind. It points out that the Special Committee appointed by the Bombay Government in June 1913 recommended that Urdu should be adopted as the medium of instruction throughout the Presidency and two courses of study were provided for Urdu schools (1) in which Urdu is the medium of instruction and the local vernacular is treated as a compulsory second language and (2) in which the vernacular is the medium of instruction and Urdu is taught as the second language. In each school the choice between the two courses is left to the Muslim opinion to decide. Government, however, have now ordered that in schools in which Urdu is the medium of instruction the teaching of the local vernacular as the second language should be optional.

Arrangements have been made to increase the supply of trained teachers, whose numbers are steadily increasing. For the first need of Muslim education is to provide efficient primary schools without which satisfactory results in secondary and higher education cannot be obtained.

With regard to secondary education, eight Government High Schools out of seventeen have been provided with special teachers of Urdu and 15 per cent of the places in Government secondary schools have been reserved for Muslims, while free studentships for Muslims at the rate of 22½ per cent of the total number of Mahomedan pupils in each Government secondary school have been sanctioned. Altogether the proportion of scholarships provided for Muslims is largely in excess of that provided for other schools.

No difficulty is felt by Muslim pupils in gaining admission to Government Arts Colleges and in each Government professional college 10 per cent of the total number of places are reserved for Muslims provided they possess the minimum qualifications required for admission. A large number of scholarships are also available for Muslim students in these colleges.

The measures taken by Government have led to a marked progress in the education of Muslims in the Presidency Proper. Comparing the figures for 1915–16 and 1923–24, it is seen that Muslims attending colleges increased by 76 per cent, those in secondary schools by 25 per cent and those in primary schools by 27 per cent, although the total Muslim population recorded in the Census of 1921 was less than that in the Census of 1911. Taking the three main communities 15.14 per cent of the Brahmins attend school, 3.726 per cent of the intermediate Hindus and 7.77 per cent of the Muslims. Muslims are more than twice as advanced as the intermediate Hindu community in primary education and from 3 to 4 times in secondary and higher education.

In Sind the number of Muslims attending educational institutions has increased considerably during the period from 1915–16 to 1923–24: as regards secondary schools by nearly 59 per cent and as regards primary schools by nearly 11 per cent. The comparatively slow rate of progress in primary education appears to be due to the Mulla schools having been largely affected by the Khilafat agitation and partly also to the gradual raising of the standard required, the less efficient schools being struck off the aided list. "It is clear" says the note "that Sind Muslims have great leeway to make up before they can come up to the level of the other communities. For, whereas the percentage of Muslim pupils to population in the Presidency Proper is 7.77, it is only 1.9 in Sind which compares unfavourably with the proportion of 3.726 for intermediate Hindus in the Presidency Proper."

The pamphlet gives an interesting table comparing the progress of Muslim education in the Presidency with the Punjab, which has

undergone great material advancement in recent years. Commenting on this the pamphlet says :—

"From the figures given above it will be seen that the percentage of the Muslim population in colleges in Bombay (Presidency Proper) is .023 against .015 for the Punjab. For secondary schools it is .34 for Bombay against .38 for the Punjab. These figures, however, are entirely misleading as the Punjab classes the three upper standards of the Vernacular schools as secondary (vernacular middle) while in the Presidency they are classed as primary. If the same classification were followed in this Presidency the number in secondary schools in 1923–24 would be 10,615, giving a percentage to population of .77 against .38 for the Punjab. In primary education the Presidency is far ahead of the Punjab, having a percentage of 7.413 against 2.384. (The deduction to be made in the Bombay figures on account of pupils studying in the three higher standards would not appreciably affect this total.) It was not surprising, therefore, that for the years taken it was possible for the Punjab, starting as it did with a percentage of 1.045, to show an increase of 138 per cent against that of 26 per cent for this Presidency. It must further be remembered that there have been exceptional features at work in the Punjab; the return of large numbers of soldiers from the War, with their experience of European and other countries, the increase in prosperity owing to the enormous spread of irrigation and the high prices of wheat—these and other circumstances have acted as a stimulus which is more than sufficient to account for the expansion of primary education. It may be added, that the cost to Government per pupil in a primary school in 1923–24 was Rs. 8–11–8 in the Punjab, while it was Rs. 19–15–8 in this Presidency, *i.e.*, over 2¼ times as much. It is interesting to note that the rate of increase in the case of colleges and secondary schools was considerably higher in this Presidency than in the Punjab.

"It will further be realized that the difficulties in dealing with Muslim education in this Presidency are increased by the fact that most Muslims demand that their children shall be taught through a medium which is not the common vernacular. Thus special primary schools have to be provided for Muslims in addition to the schools which teach the ordinary local vernacular. This renders it difficult to provide for Muslim pupils in small villages, and necessarily acts as a check on the expansion of primary education for Muslim children."

Marketing of Mangoes.

By "Son of the Soil".

Bangalore enjoys a large trade in mangoes. And so anything affecting it right may prove helpful. In May 1924, the Government of Bombay appointed a Committee to report on the present organization of marketing mango products in the Konkan and to make recommendations for its improvement. The report of this Committee has just been published. It points out that there are in the four Konkan districts about 5,341 acres under regular Mango plantations, besides lakhs of stray *raival* trees (country) scattered throughout the tract. It is chiefly the high class grafted kinds, however, which enter the trade. It is estimated that the export trade amounts annually to about Rs. 20 lakhs from the Konkan Districts out of which the district of Ratnagiri alone contributes about half, and so far as this district is concerned mango is the chief agricultural product of export. The quantity consumed locally as ripe fruit or in the form of pickles and preserves is equally large if not more, and the quantity of fruit going to waste, mostly of *raival*, is not inconsiderable.

Almost all the mango crop is handled by contractors who speculate generally after the blossom is set and pay a part or whole of the dues in advance to the grower if necessary. Only 5 per cent of the crop is marketed direct by the grower and invariably it is the contractor who is concerned in the marketing of the fruit. It is estimated that nearly two lakhs of baskets of mangoes, each containing 75 to 100 mangoes, are carried by the steamship companies to Bombay, freight charges amounting roughly to Rs. 1¾ lakhs. Ratnagiri alone exports over 1,16,000 baskets. About 90 per cent of the Konkan crop is over by the end of May when steamer communication is stopped. The fruit when brought to Bombay is not sold by open auction but all transactions are

conducted under cover. Buyers and packers generally know very little about these wholesale terms. The prices in such transactions vary from 25 to 30 per cent for the same quality on the same day. There are no cold storage arrangements to hold the supply till the market rates improve. Consequently all fruits must be sold without delay. The Committee sums up the other defects of the existing arrangements of marketing as follows :

(1) The growers do not pick, pack and sell their own fruit in the market but sell it on tree to the contractor.

(2) Picking immature fruit and no sorting.

(3) Loss due to insect, fungi or blight.

(4) Basket system is unsuitable to stand rough handling in transit.

(5) Fruit packages are not sealed.

(6) There is no news-service agency to keep growers and dealers in distant parts of the Presidency informed about the wholesale and retail prices.

(7) Rough handling of packages in transit.

(8) Freight charges are high.

(9) Short stoppage of steamers at bunders necessitating heavy loading.

(10) There are no facilities and encouragement to preserve fruit.

(11) Absence of co-operative organizations.

(12) There are no means of educating the public to the appreciation of the economic value of the mango food so as to increase and distribute its consumption uniformly throughout the year.

To remedy these defects, the Committee makes many suggestions. Improved methods of packing and transport are advocated. Steamer freight on fruits and vegetables should not exceed those of the Railway. Wholesale dealings in mango must be carried on by open auction in the market. The Committee considers that State aid is essential for the improvement of canning factories. At present there are only three canning factories but they are poorly equipped and the business conducted by them is hardly worth recording. Such factories require to be stimulated and fostered by reasonable assistance from Government. It is recommended that the Agricultural Department should maintain an expert in canning in order to render free advice to all such factories and that Government should encourage the industry by offering a loan not exceeding Rs. 20,000, payable without interest within 10 years to any canning factories or to any Mango Crop Sale Society that may be organized in the Konkan. A well-equipped fruit research station and laboratory with model canning machinery is regarded as very necessary for the improvement of the mango industry. This will cost Rs. 15,000 for initial expenses and Rs. 23,000 for recurring charges. But the larger part of the recurring expenses can be recovered by the sales of canned goods. Among the other recommendations the Committee advocates the use of cold storage, reduction of Port Trust charges on mango packages, co-operative sales and establishment of an advisory committee for the improvement of fruit market in Bombay.

Copies of the Committee's report can be had from the Government Book Depot, Poona. Price As. 7.

The International Labour Office has already undertaken the compilation of studies on the conditions of employment of certain branches of intellectual workers. A study on engineers and chemists has already been published, while material for further studies dealing with the conditions of work of musicians, engineers and technicians has been collected. On the request of several organizations of journalists, the International Labour Office has circulated to a number of organizations of professional journalists in a large number of countries a questionnaire covering their conditions of employment. The main points to which attention is drawn are the legal status of the members, the labour market, contracts of service, conditions of employment, remuneration, provident institutions, organization, and the general position of the profession. Journalistic institutions of over 20 countries have been approached in this matter, and a number of detailed and carefully prepared replies have already been received. In particular the reply of the Syndicates Journalists of France should be mentioned, which, in a document of 43 pages, gives very interesting and complete replies to the points raised. While it is at present too early to give a full account of the results of this enquiry, it is safe to say that the replies that have been received to date indicate that in a large number of countries the profession of journalism is, in the view of the journalists' associations, insufficiently remunerated and protected. The majority of the replies insist on the necessity for regular contracts on service, insurance against risks, and better pay.

Aims of American Agricultural Policy.

By "Scrutator".

Since the rejection by the United States Congress in June 1924 of the bold proposals of the McNary-Haugen Farm Relief Bill, which proposed the establishment of a 200,000,000 dollar corporation, capitalized with government funds, to promote the sale outside the States of surplus farm products (the whole purpose of the organization being to get rid of such surplus products even at a loss in order to stabilize prices of agricultural products on the domestic market, and thus ensure a living to the American producer), discussion has not ceased on the prospects and policies of the American farmer.

With the unexpected revival of the agricultural industry for causes which are probably connected with the beginning of the industrial revival in Europe, the proposals to relieve the American farming community at whatever cost have to some extent ceased to be so definitely urged. However, the psychological effects of the extraordinary depression under which American agriculture suffered during the years after the war owing to the dislocation of prices and the inability of the American and foreign consumer to pay for what he wanted in the way of foodstuffs, have been too severe wholly to pass away. They are still operating and have given rise to a demand for effective Congressional discussion, so much so that at one time the idea of a special session of Congress early in 1925 to deal with the farming problem was freely mooted.

In November of last year President Coolidge appointed an Agricultural Conference to make recommendations to help the agricultural industry. In January of this year the Conference began submitting a series of reports to be laid before Congress. So far reports on the live-stock situation, on agricultural legislation, and a report on administration, have appeared.

The report on the live-stock situation dealt with the trade and credit aspects of the industry; the report on administration is only interesting for certain criticisms which it makes on the overlapping in various Government Departments.

The report on agricultural legislation contains some concrete proposals, but is certainly not revolutionary in its outlook or very constructive in its suggestions. It places considerable faith in co-operative selling, always with the encouragement and, to some extent, under the inspection of a Government Department: and makes the point that the same Government Department should not give encouragement and also make the inspection, which may possibly be of a police character if backed by legislation. The report deals also in some detail with improved credit and banking for agriculture, and further, in a very preliminary way, with transport rates. On the development of unappropriated public land it is cautious and does not see very much relief to be apprehended in the further taking up of public lands.

One of the more interesting suggestions it makes is for further money to be expended on State Experimental Stations, and it states, very correctly, that the whole vast field of agricultural economics, rural sociology, and home economics, has been opened up since the amount of Federal appropriation was originally settled in 1909. In view of this and in view further of the decline in the purchasing power of money generally, it is quite clear, in the opinion of the Conference, that the Federal appropriations for this purpose are not nearly so large as they should be.

The Conference introduced its report on legislation with a reference to the inability of the American farmer to compete with imported agricultural products "created through cheap foreign labour and lower standards of living", and adds very significantly that any stimulation of agricultural production for export abroad will increasingly subject the American farmer to competition with a production which is based on such alleged lower standards of living in countries outside the American continent.

These remarks would seem to reflect a very interesting statement made by Secretary Hoover to the Conference, in which he sketched, briefly but definitely, a revision of American agricultural policy in an almost revolutionary sense. He pleads for a long-view national policy and looks forward far into the future, urging upon the Conference what might be defined almost as a "closed domestic market" for American agriculture.

In other words, he urges America to produce what America can eat, and argues that the natural increase of population reckoned at 15,000,000 mouths for every decade will gradually absorb the agricultural output of

the American farmer; even now 90 per cent of that output is absorbed by the domestic market, according to Secretary Hoover. He is anxious to assume a larger buying power of the American public as the result of a higher standard of living, and lays stress on the need for eliminating all waste in distribution. Thus he sketches an economically self-sufficing America enabled by its very self-sufficiency to adopt and maintain standards of living higher than can be found elsewhere.

The influence of these ideas cannot at present be estimated, but that they have affected the minds of the Agricultural Conference is beyond a doubt, though complaint is made that the Conference had not the courage to go beyond a few pleasant words on the subject. The Hoover policy is, in a sense, an outcome of the defeat of the McNary-Haugen Bill, which itself was only one of several measures designed to deal with the crucial problem of the relation of the American producer to his buyer. The McNary-Haugen Bill attacked the problem, in effect, by arranging that the American farmer should be sure of such a price as would enable him to make a living, the loss being shouldered by the State, in other words, being taxed on to the general public. The conflict of interests thus aroused no doubt contributed to the defeat of proposals so far-reaching.

The ideas of Mr. Hoover have a similar ultimate aim. He would limit the amount of production to a definite amount of consumption, and would retain all that consumption within the country, placing his faith partly in the natural increase of population, partly in the possibility of wiping out the present amounts of imported food, and lastly—an important point—in a future rise of the standard of comfort of the American public: these three factors should be sufficient to absorb the present margin of surplus.

Supporters of export Bills or of subsidy Bills like the McNary-Haugen, on the other hand, are concerned only to deal with the present surplus of production. In their view it is getting rid of this surplus which drags down the American farmer, and it is here that they allege themselves to be confronted with "the cheap labour and lower standards" of other countries.

Ricinus Communis in Bahia and Brazil.

By George M. Chard, of Bahia.*

The castor-oil plant, to give it its ordinary name, is supposed to have originated in India and from thence to have been carried to all parts of the tropical world. This can hardly be the case for the following reasons:- castor-oil and its uses have been known from the earliest times; for instance, Pliny refers to it under the name of "kiki," and Caillard found the seed in the sarcophagus of an Egyptian king who had been dead 4,000 years.† Both Simmonds and Lant Carpenter hold this view of the Indian derivation of the plant. The writer has found four varieties growing here, in the same soil and under the same climatic conditions, and yet the authorities quoted above say there are but two, and Watt speaks definitely of one variety only, *i.e.*, *R. communis* Linn. *Ricinus* belongs to the great family of Euphorbiaceæ which covers some 200 members, as far as it is known. Quite recently I came across a hitherto unknown member of the family. It had not even a name and was new to the agricultural department of the state. The seeds are oblong and mottled, and have at their base a peculiar indentation which distinguishes them from *R. communis*. The oil content is apparently the same—some 60 per cent in the kernel—and in view of the fact that cattle resort to it when there is a shortage of fodder, it cannot have the poisonous properties of castor-oil.‡ But to return to castor. This plant may be a shrub or a tree; it may yield a bean the size of a child's little finger nail or one equal to the thumb-nail of a grown man. The smallest seed yields the highest proportion of oil.‖

* With acknowledgments to *Tropical Life*.

† Now Egypt being in Africa, this discovery confirms the statement in Sir George Watt's "Dictionary of Economic Products," that modern botanists point to the castor-oil plant as coming from Africa, where alone it is found in a truly wild state.—ED., TROPICAL LIFE.

‡ Against this, Bolton in "Fatty Foods," p. 263, describes the process for destroying this toxic property.

‖ Against Watt's statement that the *R. communis* is a genus of the *Euphorbiaceæ* family which possesses but one species, is the following remark written probably twenty years later: "Seeing that there are such a large number of species cultivated, the imported seed varies very much in size, shape and markings" Bolton and Revis in 'Fatty Foods'—of which we are promised a new edition shortly.—ED., TROPICAL LIFE.

Of the four varieties here, three are oval in shape—mottled brown and white, whilst the fourth is more or less square and is coloured red and white. Any soil will bear the castor-plant. In this country (Bahia) any decent dust-heap bears its crown of five-fingered pale-green leaves. It grows everywhere. The growth is extremely rapid, especially in the tree variety —for castor, as stated above, may be a bush or a tree of 20 ft. altitude. In two months from the time of planting the seed in Brazil, there is a crop; and the crop is continuous. Imagine a seed planted in England, under the most favourable circumstances, and resulting in seven weeks in a tree with a girth of 18 in., and yet this is what occurs in the tropics, at least in Brazil.

The Oil and its Uses.

Castor-oil has many uses. First of all, there are its medicinal qualities; secondly, it is the finest lubricant in the world for heavy machinery; thirdly, there is its use for leather-dressing; fourthly, its use in soap-making. Altogether it is a most useful plant. It is a curious fact that wherever a disease is prevalent, Nature provides a remedy on the spot. This is so in the case of malaria and yellow fever and the provision of the castor-plant. As a matter of fact, the bean, or seed, of the plant is extremely poisonous, half a dozen being sufficient to induce a disease nearly allied to Asiatic cholera. The main principle of this bean is a fatty acid known as ricinoleic, and there are some traces of palmitic acid, but the writer is disposed to think that the nature and virulence of these properties are largely dependent upon the character of the soil. Where exactly this poison lies no one yet has seemingly determined. The oil, as we know it for medicinal purposes, is extracted by hydraulic pressure and afterwards refined to such an extent that it has lost its colour and most of its disagreeable odour; it has also lost much of its virulence. Castor-oil would seem to have three effects upon the human system:—

(1) A purgative.
(2) A destroyer of microbes in the stomach and intestines.
(3) A lubricant.

Extraction of the Oil.

In India and Brazil the usual method of extraction of oil from the bean is by boiling and skimming. The oil thus obtained is green in colour, and violent in its action on the human body. In both countries it forms the main illuminant. The high colour can be reduced by sunlight, and its objectionable smell and poisonous properties by filtration through a bed of animal charcoal. As a lubricant for heavy machinery and air-craft, castor-oil has not its equal, presenting a resistance to friction that no other oil possesses. It has a specific gravity varying from 0.960 to 0.966 at 60° F., and its boiling point is 509° F. It is largely used in the "dressing" of leather, and strangely enough, the leather so dressed is not only made water-tight, but, in the case of boots, will accept a polish. It has already been stated that medicinal oil, technically known as cold-drawn, is the direct result of hydraulic pressure on the decorticated seed. When this oil is withdrawn, the residue is heated and returned to the "presses", oftentimes twice, whereby the last obtainable drop of oil is extracted. But these last two "pressings" are no good for medicine, they can only be used for industrial purposes. It is a curious fact that heat should, by its application, intensify the poisonous properties the seeds contain.

Prices and a Pest.

During the eight years before the war, castor-seed varied only 10*s.* per ton, *i.e.*, from £13 5*s.* to £13 15*s.*, on the English market, proving it to be one of the safest crops, from a marketable standpoint, that a planter could grow. to-day the price is nearly double. The writer spent ten years in studying the habits of the plant, and in that time found no evidence of disease. He planted seed and raised 13,000 trees, but they had hardly given their first crop when they were attacked by mildew, which swept from tree to tree over the entire area. He tried to stop the infection by lighting big fires, and finally by cutting down the trees; but all to no purpose.

Cropping.—The castor-plant produces a bunch of capsules shaped like the flower of the horse-chestnut—each capsule, which has much the appearance of a beech-nut, contains three seeds. As soon as a capsule becomes black the whole bunch is picked and left to ripen in the sun. As the pods ripen they burst with a sharp "crack" and the seeds are spread over some distance. This would seem to be a provision of Nature, for if the seeds fell directly under the tree they would soon spring up and choke the parent plant. The same arrangement is observable in *Manihot dichotoma* and other species of the family.

Why so Neglected as a Crop?

In view of the great economic value of castor it is a matter for astonishment that its cultivation is not more systematic, for there is

probably none other crop that yields such high returns —nor yields them so quickly. Once a castor-tree or bush asserts itself it is there to stay, and nothing but "grubbing up" will get rid of it. Most of the castor-seed of commerce is produced in backyards or gathered on the highways. Now, castor yields exactly three times as much oil to the acre as the olive and twice as much as the oil palm ; therefore it would seem that its systematic cultivation is "good business".

How to Plant.

The proper course in planting *ricinus* is, after burning the brush and allowing the land to cool, to prod holes and drop into each three seeds at a depth of about three inches. Should all three arrive above ground they are left to develop for a week in order to determine which is the strongest. The weaklings should then be immediately pulled up by the roots. It is advisable to keep the soil clean for the first month, but after that the plant will take care of itself and keep down the weeds. Whether this keeping down of the weeds is due to shade or to the poisonous qualities of the plant permeating the soil the writer is unable to affirm, but is inclined to think the latter reason the correct one. Neither under a bamboo nor a banana will one find much vegetation, and as the shade of neither one nor the other is intensive this lack must be due to some qualities these plants communicate to the soil. The writer has noticed that neither insects nor birds ever resort to the flowers of *ricinus* for honey or food, and this may probably be the reason why the plant is so immune from disease. English doctors long ago declaimed against the insanitary practice of kissing, but without success as regards checking the risk, so far as one can gather. All the same, supposing that the doctors were right in theory, is it not likely that the bee, the wasp, and the humming-bird can and do communicate disease from one plant to another ? and as none like "kissing" *ricinus*, it avoids disease. By the way, I discovered long ago that the humming-bird did not live on the honey of a plant, as was previously supposed, but preyed upon the insects that frequented the flowers. Humming-birds are, therefore, undoubtedly the medium of much of the interpollination and consequent cross-breeding that occurs amongst tropical plants where these birds abound.

The Poonac or Cake.

The mass or cake that is left after extraction of castor-oil is of little value in Brazil. It is used sometimes as a fertilizer, but it is doubtful whether its poisonous qualities do not do more harm than good to the soil. In the U.S.A. the cake is consigned to the furnace of the nearest factory. *Ricinus* has a tolerably wide range, for there are few tropical and semi-tropical countries that do not contain it. Altogether it is a plant that deserves far more attention than has yet been bestowed upon it, ever since the air-craft during the war sent the world clamouring for its oil.

Philadelphia Exhibition.

Philadelphia, October 1st.—Fully one million delegates to the nearly two hundred various conventions scheduled for Philadelphia in 1926 will visit the Sesquicentennial International Exposition, opening June 1. A large proportion of the delegates will be accompanied by relatives and friends, so that, it is estimated, several million persons will come to this city because of these conventions who might not otherwise make the trip.

Discussions about every subject under the sun and some beyond that luminary will take place at these conventions. Organizations, State, National and International, with interests including industry, commerce, finance, science, art, literature, education, philosophy, religion, sociology, and all other avenues by which mankind is progressing toward the achievement of its destiny, will meet to discuss and deliberate on the most recent developments in the manifold activities represented.

It will be an additional source of gratification to the millions of general visitors to the Exposition to have the convenient opportunity of attending open sessions of these conventions to hear the last word concerning their favorite subjects.

Trade Bodies Aid.

More than one hundred and fifty of the organizatons coming next year chose this city largely because of the well-directed efforts of the Conventions and Exhibitions Bureau of the Philadelphia Chamber of Commerce, which makes this one of its practical ways of co-operating with the Sesqui management.

Other commercial organizations of Philadelphia, including the Board of Trade, the Maritime Exchange, the Commercial Exchange

and the Bourse, are likewise doing all in their power to further the plans of the Sesqui administration. Officials and members of these bodies, whose business takes them to different parts of the country and of the world, miss no opportunity in acquainting those with whom they come in contact with unanswerable reasons why no one should fail to be in Philadelphia next summer when the greatest international exposition ever arranged will be open for all the world to enjoy.

Hotels, railroad and steamship companies and others concerned in the comfort and welfare of visitors to the city will co-operate in every way to convince the stranger within its gates that he has indeed come to the City of Brotherly Love. Everything will be done to give him the maximum of service and comfort with the minimum of expense and trouble.

Entertainment of delegates to deliberative bodies may be said to come natural to Philadelphia, as the city's experience in so doing dates from the earliest years of the political history of the United States. The First Continental Congress, the Second Continental Congress, subsequent sessions of the National Congress to the year 1800; the memorable convention at which the Constitution came into being: these and other historic meetings brought to Philadelphia the most important men of the time. Their creature comfort was well provided for allowing for the limitations of the day.

Hospitality Famous.

Delegates to next summer's conventions will find that Philadelphia's hospitality has not become mere tradition. It is a vital flame that has not died down in the century and a half that bridges the way from the Promulgation of the Declaration of Independence to the Sesquicentennial celebration of that epoch-marking event.

Industrial and commercial progress of the day will be reflected from the sessions of a long list of organizations working for the development and improvement of many lines of business activity. Everything from the marketing of cranberries to the construction of ocean liners will be discussed at one or other of these meetings.

Finance and insurance and the problems attendant on each will be weighed and studied in numerous conferences, as will labor and sociological questions in other assemblies.

"Ad" Clubs Coming.

Sessions of various newspaper and publicity organizations will teem with interest for the up-to-date business man. The Associated Advertising Clubs of the World will have a huge attendance of delegates, many from the far ends of the globe.

Educators from all parts of the country and from abroad will meet to discuss important questions. The results of the deliberations of the National Education Association and of Schoolmen's Week will be far-reaching, both as to time and territory, affecting the present youth and future manhood of countless Americans in all sections of the country. College fraternities and sororities will bring together thousands of those who have benefited by the higher educational facilities the United States so amply provides.

Scientific and learned societies will discuss recent researches and discoveries at meetings of such prominent bodies as the American Academy of Political and Social Science, American Association for the Advancement of Science, American Physical Society, American Chemical Society, American Philosophical Society, American Society of Civil Engineers, and so on through a list embracing organizations whose findings are quoted as authoritative throughout the world.

Many Church Conferences.

Religious congresses and conferences will include those of many denominations; among them will be a Protestant Episcopal Diocesan Convention, a Reformed Church General Synod, a Methodist Episcopal Conference, the meeting of the Universalist Sunday School Association, and that of the Salvation Army.

Patriotic societies will hold largely attended conventions: The American Legion, the Patriotic Sons of America, Sons of the American Revolution, Daughters of the American Revolution and Order of Independent Americans of Pennsylvania, are a few of the organized societies of lovers of their country which will hold largely attended conventions. The meeting of the Descendants of the Signers of the Declaration of Independence to be held in July will have particular significance.

Army of Odd Fellows.

The latest great fraternal organization to choose this city as its meeting place next year is the Independent Order of Odd Fellows.

Major William A. Wert, attached to the staff of Major-General Fred H. A. Hahn, Department of the State of Iowa, a visitor at Sesqui headquarters on October 20, announced that 150,000 delegates will attend the sessions next September.

"The World's Fair, of course, is the paramount attraction," Major Wert said, "but another strong reason for the selection of the Sesqui City is the facilities it offers for great parades and other outdoor demonstrations, Broad Street and the Parkway ranking with the most notable city avenues and boulevards in the world."

Major Wert reserved hotel accommodations for the Patriarchs Militant, a uniformed rank of the Independent Order of Odd Fellows, located in Akron, Ohio, which, he asserts, is the largest fraternal uniformed rank in this or any other country.

The fact that this and other great organizations, including the Mystic Shrine, American Legion, Knights of Columbus and others, have decided to enjoy Philadelphia's long-famed unrivalled charms as a convention city, which will be immeasurably enhanced by the wonders and delights of the Sesquicentennial, convinces Mayor W. Freeland Kendrick, President, and the members of the Sesquicentennial Exhibition Association that the Exposition programme is being enthusiastically supported by the people throughout the United States.

Excursions Planned.

In addition to making arrangements for the attendance of the delegates, many of the organizations are planning excursions to Philadelphia during the periods of their conventions. Tickets for these excursions will not be confined to sale among the members and their families, but may be purchased by anyone desirous of seeing the Sesqui.

Groups of residents of cities and towns in every section of the country are planning motor trips to Philadelphia, not only to visit the Exposition, but also to see the many places of historical interest in and near the city. Numerous inquiries are daily being received by the Sesquicentennial Automobile Committee as to arrangements being made to assure motorists of desirable accommodations during their sojourn here.

As interest in the World's Fair is steadily increasing from coast to coast, it is believed the official estimate of Exposition visitors of 50,000,000 is a very conservative figure. Philadelphia, "the crossroads of the world," also will be the rendezvous of thousands of old friends who, separated since their childhood, or when they were mustered out of the service after the World War, have not had an opportunity to meet; so, there will be many joyous "reunions" at the Sesqui.

Economics in the West.

The Question of Gold Inflation.

London, 1st November, 1925.—It is generally supposed that at some time in the fairly near future gold may tend to flow out of the United States, where it has for long been accumulating in luxurious idleness, and move towards this country. Some people have, therefore, foreseen a possibility of trade improvement, which can be lasting because based on a widening volume of credit. But they omitted to take into their calculations the mental processes of those who perceive in the inflow of gold a heaven-sent opportunity of reducing that *opus diaboli*, the fiduciary circulation. At the moment the issue of currency notes backed by nothing more metallic than Government debt is about £235 millions, and it is therefore suggested that the Government should purchase gold in order to reduce this figure to substantially smaller proportions before the issue of notes is placed entirely in the hands of the Bank of England. Quite apart from the question whether heavy gold imports are a probability of the future, the fact that the proposal is put forward by responsible persons, whose voice is widely heard and respectfully listened to, necessitates careful and categorical consideration of the subject.

Let it be admitted straight away that gold bought by the Government would, assuming no change in the total of currency notes, reduce the fiduciary issue. That fact is incontrovertible. The gold would simply replace Government securities held by the Government itself.

Gold and Taxation.

But unfortunately this is not the end—indeed scarcely the beginning—of the process. From what resources is the Government to buy gold? There are only two sources of income for this purpose, just as there are only two sources of income for buying shells and bully beef, tin-hats and tanks, and for paying civil service salaries, unemployment relief, and pensions to the descendants of deceased warriors. These two sources are the unromantic taxes and loans. The Government may

ask for more from its long-suffering masters, the public, or it may demand accommodation from banks and other institutions, and from private persons with funds to invest.

Let us examine the first source, taxes. At the present time the Treasury is committed to apply £50 millions a year to the reduction of debt. Assuming this amount, as it should, comes entirely from taxes, some part of it might be applied in the purchase of gold to reduce the fiduciary issue of currency notes. Thus taxation would not be directly increased. But the very object of the sinking fund is to reduce interest charges. Consequently the utilization of a part or the whole of the amount to buy gold would defeat the object of the fund. The yearly allocation would not serve its purpose of cutting down expenditure, and to that extent taxation would be on a somewhat higher level than need have been the case. Alternatively, buying gold out of the proceeds of taxation would necessarily mean higher taxation. In either event—whether the sinking fund were utilized or not—the community would be in the position of being taxed to pay for gold, which incidentally it would never see and from which it would derive no practical benefit.

On the other hand, however, the Government might borrow to buy gold. This would appear the more probable result, since the budget is unlikely to balance in the present year, and on the Chancellor's own remarks there is a risk of higher taxation next year. But new borrowing, whether from banks or the public involves new debt charges and consequently necessitates a larger income from current sources to meet current expenses. Here again then we should enjoy the spectacle of a community being taxed to purchase gold.

Treasury and Bank of England.

The question may, therefore, quite well arise, whether the Treasury, and through it the taxpayer, should be called upon to purchase gold as fresh metallic backing for currency notes. It should be remembered that the Treasury began the issue of notes to meet a need the Bank of England had not the legal power to supply. Consequently the endowment of the Bank of England with that power carries with it a presumption of the Bank's ability to support it, and the Government stands in no way committed to reduce the fiduciary circulation before handing over the issue of £1 and 10*s.* notes to the Bank. Already the Government has exchanged £27 millions of gold for Bank notes on the occasion of the return to gold, and the transfer has not aided the monetary situation by one iota. Instead of going to swell the reserve in the Banking Department it went straight into the Issue Department. Indeed its interment in the vaults of the Bank of England rendered necessary the provision of large American credits, and prevented it from being readily available for export.

So far from the Treasury buying gold, now that the gold standard has been restored, any metal flowing in and not being bought for re-shipment or for industrial purposes should be handed in to the Bank of England, that is, to the institution which is bound by the terms of its charter to buy gold at a fixed price. In other words, with a free market for gold, the free market should operate without the complication of Government purchases. The law should once more become fully effective, and surplus gold should flow into the Bank direct. This is indeed a prerequisite for the functioning of the gold standard.

Gold Standard in Operation.

The chief virtue of the gold standard is its tendency to equalize commodity price levels the world over, and therefore to provide a uniform competitive basis for the conduct of international trade. The reason why gold flows out of a country lies in the fact that prices in that country have risen relatively to external prices. Conversely, gold tends to flow into the country where prices are relatively low. But gold flowing out of the country of high prices and into the country of low prices, assuming freedom of operation, reduces the volume of money in the former and increases it in the latter. And the result is to reduce prices in the former and raise them in the latter, thus restoring equilibrium.

In order, in our own case, to produce this result, the gold would have to be paid into the reserve in the Banking Department of the Bank of England, thus increasing the basis for an expansion of credit. If, however, the Government were to buy gold to put at the back of its currency notes before handing over the issue to the Bank of England, it would immediately deprive the metal of its legitimate function. Furthermore, its sterility would be permanent, since when the note issues are amalgamated the gold would go into the Issue Department and would have no effect whatsoever on the credit situation. Consequently the gold standard would *pro tanto* be abrogated. At least its object would be defeated. But another consequence must be noted. By rendering the gold barren, prices would be

kept unduly low in this country, with the result that the exchanges would constantly be clustering around the British gold import point. The effect would be to strengthen the inward flow of gold, so that by not allowing the metal to fulfil its normal functions still more gold might be drawn in until we became the unwilling custodian of large and unwieldy stocks of yellow metal.

A point that is often neglected, moreover, is that the gold has to be paid for. It is unlikely that our exports would, under present conditions, be materially increased, so that the gold coming in would necessarily displace some other imports. These might be cotton or they might be cocoanuts; motor cars or manganese; but whatever they were—goods or services—they would mean a curtailment of the supply and consequently either a reduction in the standard of life or a drain on the existing stocks of materials. We should in fact be trying to feed, clothe, house, educate and amuse ourselves on gold, a somewhat indigestible and on the whole unsatisfying material.

Clearly then any gold coming in should within limits be allowed to form the basis for a growing volume of credit. "Within limits" is an elastic term however, and it calls for definition. The Americans defined it in practice when they refused to allow the huge imports of gold to give rise to rapid and large-scale expansion of credit The point at which it becomes advisable to check the growth of credit is that stage at which speculation becomes notably rife. We need not wait until commodity and stock markets are obviously working up to excitement bordering on frenzy before we call a halt to credit expansion.

Possibility of Gold Inflation.

The situation now in this country is far different, be it noted, from that in America during the westward flow of gold. At that time no other country of large commercial importance was on a gold standard. Consequently there was no level to which prices could not have been driven had credit expansion gone on unchecked. Now on the contrary the gold standard is in wider operation, and consequently a rise in prices here far above the level elsewhere would depress sterling to a discount, gold export point would be reached, and thus an outward flow inaugurated. This is indeed the chief virtue of the gold standard, that it obviates to a large extent local credit and price movements.

Nevertheless it would be quite possible to reach a dangerous situation in this country through excessive credit expansion on heavy gold imports. This it is useless to deny, and the risk, though remote, must be dealt with. How would it be removed? Simply in the old, old way, by the Bank of England selling securities. Directly signs appeared of a dangerous development of speculation the Bank would call in loans or sell investments, at the same time raising its discount rate, thus imposing a check on credit expansion. The incoming gold would then have had no other effect than to replace earning assets in the Banking Department of the Bank of England.

Such a process would place the Bank of England in a position similar to that occupied until recently by the Federal Reserve Banks. The steady inflow of gold to America might well have brought about acute inflation in that country had not the Reserve Banks, which fulfil a credit function similar to that of the Bank of England, made room for the gold by disposing of profit-earning assets. So far indeed was this process carried that only six of the twelve Reserve Banks earned sufficient in the year 1924 to pay their expenses and dividend without drawing on their accumulated surplus. The United States Treasury did not bear the cost of the incoming gold, except to the extent that the franchise tax, payable out of surplus earnings of the Reserve Banks, was curtailed. Similarly, as in America so in England, the cost of protecting the economic system from the ill effects of speculative inflation based on incoming gold should fall on the central bank, the accredited controller of credit.

The argument, therefore, may be stated in a few words. An inflow of gold should be allowed to go into the Bank of England to form a basis necessary to credit expansion, and not be bought by the Treasury for stultification. This course would itself tend to confine the inflow to manageable proportions. If, however, credit should tend to expand too rapidly, then the Bank of England should perform its proper function of credit control by cutting down its Government and other securities to make room for gold.

Regulation of Gold Imports.

It is highly improbable, however, that the Bank will in fact ever be called upon to follow this course to a point which will at all drastically reduce its earning power. It has already been noted that on a widespread gold standard only sufficient gold will flow here, provided

it is allowed to function normally, to adjust the British price level to that obtaining in other gold standard countries. But an additional reason may be noted for supposing that gold will not be allowed to reach this country in excessive quantities. The gold import point for newly-mined metal from South Africa is below the level of the import point from other countries such as the United States. The South African gold, however, can readily be absorbed in the ordinary course of marketing; it is the redundant American gold which gives rise to the fears of gold inflation. If, however, the price level in this country were kept so low as to maintain sterling at a premium in terms of dollars, it would clearly be profitable for the Treasury to sell sterling and buy dollars, thus preventing the exchange from reaching import point and checking the eastward flow of gold. The dollar balances so acquired could either be invested in United States Government bonds or utilized in advance payment of instalments of the American debt. In either case the Government would be enabled to effect a saving on interest account. It may safely be assumed, therefore, that on account of the existence of the American debt there need be no fear of an inflow of gold of dimensions at all comparable with the flow into America in recent years.

Still another factor points to the same conclusion. A relative rise in American prices must necessarily be the cause of any future appreciation of sterling in terms of dollars, and it is generally agreed that large-scale external lending by America will be mainly responsible for this development. But it must be remembered that with the complete lifting of the embargo overseas lending by this country will also assume larger proportions and retard the upward movement in sterling.

It may be said, therefore, that the advice of the extreme exponents of deflation to the effect that the fiduciary issue of notes should be materially reduced is not only unsound by reason of its effects but also by reason of the premises upon which it is based. It not only entails a continuance of business depression and in effect the suspension of the operation of the gold standard, but it assumes a condition of affairs which would scarcely be allowed to arise. It is difficult to conceive that the Treasury would let slip such an opportunity as would be presented by an exchange at gold import point to effect a reduction in the external debt charge. There is, in fact, little to give cause for alarm in the vast gold holdings of the United States on the ground of the possibility of their removal to this country.

The present policy of the Bank of England in allowing gold to flow out freely is obviously well-advised. The outflow will produce its own cure, and by freely exporting gold we are bringing nearer the day when the rise in exchange will put this country in command of the gold situation.

Education in the Army.

The results of the examination held in April of last year in the Home Commands, on the Rhine, in India, and at other stations abroad, states the War Office, reveal an increasing desire on the part of non-commissioned officers and men of the Regular Army to qualify for the first-class certificate of education and the special certificate of education. Two thousand six hundred and seventeen candidates sat for the first-class certificate, an increase of 384 on the number who entered for the corresponding examination in 1924, and in all 1,062 certificates were awarded, 820 to those who passed in all subjects, and 242 to those who took certain subjects to complete their qualification.

Although the percentage of certificates awarded was somewhat lower than on the occasion of the previous examination, many of the candidates returned papers much above the average. Two hundred and nineteen gained the mark of distinction; while nine obtained aggregates of 80 per cent or more and 20 aggregates of 75 per cent or more of the maximum of marks.

In the case of the special certificate, which is the highest educational certificate given in the Army and is recognized by most universities and other examining bodies in the Empire, the results were even more satisfactory. One hundred and fifty-five candidates presented themselves, as compared with 73 in April, 1924, and the subjects taken covered a wide field. They included English, French, German, Spanish, Portuguese, and Urdu in languages; ancient history, British history, and modern European history, mathematics, mechanics, chemistry, physics, physiology, economics, music, drawing, and the history of art. In all 61 certificates were awarded as compared with 25 a year ago, and 30 of the candidates obtained distinction.

Notes from U. S. A.

The United States—A Buyer of Foreign Products.

New York.—The willingness of the people of the United States to absorb the products, natural and manufactured, of other parts of the world is illustrated by the latest figures of our import trade, representing the fiscal year ending June 30, 1924. It shows for example that the United States, by far the world's largest producer of raw cotton and with cotton manufacturing establishments having a capital of over $2,000,000,000, imported last year approximately $90,000,000 worth of cotton manufactures. Of this, cotton cloths were $41,000,000 value, laces and embroideries, despite the fact that the United States is now one of the biggest lace manufacturing countries of the world, approximately $18,000,000, and cotton wearing apparel $13,000,000. Of tobacco, of which we are the world's largest producer, we imported last year $68,000,000 worth of the raw material and manufactures, and of wool, despite the fact that we are large producers of wool, our importations of last year were $26,000,000 value, and in the preceding year $35,000,000 worth. Of petroleum, of which we are by far the largest producers in the world, our imports in the last fiscal year were $65,000,000 value, and in the preceding year $54,000,000, most of this coming of course from Mexico, though our exports of petroleum products were last year $26,000,000 worth of crude petroleum and $356,000,000 of refined mineral oils in various forms, gasoline, naphtha, etc., alone standing at $150,000,000, and illuminating oil $80,000,000. The imports of laces in various forms aggregate nearly $30,000,000 of which about $18,000,000 were of cotton laces, and those of silk and fibre about $6,000,000 each. We are the world's largest live-stock producers and yet our imports of hides and skins in the year just ended were $80,000,000 value and in the preceding year $140,000,000, cattle hides alone amounting in 1924 to $23,000,000, goat skins of which we are extremely small producers $28,000,000, and kangaroo and wallaby skins, chiefly from Australia, over $1,000,000. While we are probably the world's largest producer of fruits our total imports of fruits in the year just ended amounted to $40,000,000, of which bananas alone are one-half the total or $20,000,000, most of them coming from our neighbours in Central America where capital from the United States has materially developed the banana industry. Of course our requirements for India rubber of which we produce none and of which we necessarily use enormous quantities are large, and our imports of this article last year amounted to $155,000,000 value, and even this was less than in the preceding year. A very large proportion of this rubber comes half way round the world, the bulk of it of course being produced in the plantations of the Malay Peninsula and the Dutch East Indies, though considerable quantities are brought from Brazil and certain other of the South American countries. Our reliance upon our neighbours in South America is illustrated by the fact that our imports of coffee, nearly all produced in Latin America, amounted last year to over $200,000,000 value as against $182,000,000 in the preceding year, and of this $124,000,000 worth came from Brazil, $46,000,000 from Columbia, $10,000,000 from Venezuela, and $14,000,000 from the Central American States. Of tea, coming chiefly from China and Japan, and limited quantities from India, the imports last year were $30,000,000 against $26,000,000 in the year preceding.

For silk used in our silk factories, of which the capital grew from $210,000,000 in 1914 to $532,000,000 in 1919, our imports of the raw material last year aggregated practically $400,000,000 value or to be extremely accurate $399,600,000 and incidentally it may be interesting to add that our exports of silk manufactures made from products brought half way round the globe were last year $12,000,000 value. Of course we are very large importers of diamonds and other precious stones, and it is said by experts that the value of the diamonds owned in the United States is about equal to that of other parts of the world. Our imports of diamonds and precious stones last year amounted to $73,000,000 value, of which diamonds alone were $53,000,000, and pearls nearly $6,000,000. In the preceding year the value of diamonds imported was in round terms $82,000,000 and the imports of precious stones of all classes on one occasion crossed the hundred million dollar line. We have a larger forest area than perhaps any other country except possibly Canada and Russia, yet our imports of furs last year exceeded $80,000,000 in value: and of lumber, the product of the forests, over $50,000,000,

These figures of our importation of articles in many instances similar to those which we produce at home evidence the willingness of the people of the United States to look to other parts of the world for classes of material, much of which—with the exception of silk and coffee above-mentioned—could be and in many cases are produced in the United States in very large quantities.

Export of Manufactures.

The increasing ability of the manufacturers of the United States to respond to the demands of the non-manufacturing world is illustrated by the latest figures of the Department of Commerce which show the value of exports from the United States in the first eight months of the current year. They indicate that the exports of manufactures in the full calendar year 1924 will total about $2,200,000,000 against $1,100,000,000 in the year preceding the World War, $485,000,000 in 1900, $180,000,000 in 1890, $122,000,000 in 1880 and $70,000,000 in 1870. This big growth in the exports of American manufactures, while it may not be welcome news to the other manufacturing countries of the world, will at least interest those countries in which the supplies of manufactures are imported. The increase in the value of manufactures exported means that manufactures are forming a steadily increasing percentage of the total merchandise exported. With the rapid growth of our population, which has increased forty-seven per cent since 1900, we are of course requiring for our own people a much larger share of the natural products, food and manufacturing materials, and as the total exports continue to gain it goes without saying that the percentage which manufactures form of the exports is steadily increasing. The share which manufactures form of the total exports of the eight months ending with August 1924 is fifty-six per cent against forty-seven per cent in the year preceding the war, thirty-six per cent in 1900, twenty-one per cent in 1890 and fifteen per cent in 1880. Not only are the manufacturers of the country increasing their contributions to the requirements of the outside world but they are at the same time meeting more fully the requirements of the home markets. The latest figures of manufactures imported covering eight months of 1924 indicate that manufactures now form but about thirty-eight per cent of the imports against forty-two per cent in 1910, forty-four per cent in 1890, forty-six per cent in 1880 and fifty-two per cent in 1870. This increasing share which our manufacturers are supplying in the exports of the country and in supplies required by our own people is due in large degree to the increase in capital invested in the industries, which supplies more powerful and complicated machinery in the factories and thus greatly increases the quantity of manufactures which the factories of the country are able to turn out. The capital invested in the manufacturing industries has increased from $8,975,000,000 in 1899 to $44,467,000,000 in 1919, the latest year for which capital of the manufacturing industries is officially reported, the total capital of the factories of the country in 1919 being thus about five times as great as ten years earlier. Meantime the value of manufactures turned out has increased from $11,407,000,000 in 1899 to $62,418,000,000 in 1919.

Value of Imports.

The United States is steadily increasing the market which it offers for the products of other parts of the world and that the value of our imports in the fiscal year 1924 is double that of the year preceding the war. The producers and merchants outside the United States desiring to market their surplus products in this country will be interested to know the classes of articles in which the large increase in our purchases has occurred, and for which there is still an increasing demand. Curiously the increase occurs in all of the great groups and thus interests all classes of producers, by reason of the new markets which we are offering for their respective products. Foodstuffs imported into this the greatest agricultural country of the world amounted in the fiscal year 1924 to $765,000,000 in value against $408,000,000 in 1913; raw material for use in manufacturing $1,200,000,000 against $635,000,000 in 1913; and manufactures $1,410,000,000 against $757,000,000 in 1913. Thus it will be seen that the import value of each of the three great groups—foodstuffs, manufacturing material and manufactures—has practically doubled since 1913, and that these various groups seem likely to go on increasing and thus promising to every industry of the world better opportunities from year to year in the markets of the United States.

That the whole world irrespective of climatic or geographical conditions is participating in these new markets which we are opening up is illustrated by the fact that the imports of the fiscal year 1924 from Europe alone exceeded those of 1913 by about $175,000,000; from

South America our imports have practically doubled since 1913; from North America they have practically trebled as compared with 1913; and from Asia they have more than trebled, while there is also a sharp increase in the imports from Africa. Thus the whole world has been the gainer in the new market offered by the United States whose imports in 1924 were practically twice as great in value as in 1913.

What are the principal articles in which these big gains occur? Rubber, chiefly from the Orient, totalled $155,000,000 in 1924 against only $90,000,000 in 1913; coffee, chiefly from South and Central America, $207,000,000 against $119,000,000 in 1913; silk, chiefly from the Orient, $350,000,000 in 1924 against $82,000,000 in 1913; sugar, chiefly from Cuba, $373,000,000 in 1924 against $103,000,000 in 1913; accompanied by the large increases in the sugar drawn from our own Porto Rico and the Hawaiian Islands; wool from South America, Australia and Europe totalled $138,000,000 in 1924 against $36,000,000 in 1913. There are also large increases in the imports of certain products of which we are ourselves already very large producers such as cotton, petroleum, copper and numerous other articles largely produced but at the same time largely imported. A careful study of the import list covering several hundred articles shows in practically every case much larger quantities imported in the fiscal year 1924 than in 1913.

Canadian Trade and Finance.

Canadian Business Conditions.

Montreal, November 4, 1925.—Not since the beginning of the economic readjustment period have fundamental conditions been more favourable to a healthy expansion of industry and trade. There are already signs of improvement in the business situation, and while for the most part they relate to seasonal conditions, some of the changes are indicative of the gradual restoration of balanced relations which are so necessary to general prosperity. The maladjustment between industry and agriculture has, during the past twelve months, been mitigated if not entirely relieved, and the highly satisfactory crop returns now indicate that the purchasing power of the farming community will be greater than for the past five years and more widely distributed. The yield for the three Prairie Provinces as estimated by the North-Western Grain Dealers' Association in their mid-October report, compared with the final estimates of 1924, are as follows:

	1925	1924
Wheat	400,385,000	235,694,000
Oats	392,653,000	223,325,000
Barley	65,355,000	70,630,000
Rye	9,220,000	11,126,000
Flax	6,395,000	9,577,000

Live-stock markets showed a very encouraging tone during the month. Supplies were heavy, but export demand from Great Britain and the United States was strong. Hogs are bringing high prices, and this is likely to be the case for some time to come owing to short supplies.

The major industries of the country are generally more active. The iron and steel mills are again operating closer to capacity. More than sixty thousand tons of rail business has been placed, and the demand from automobile and agricultural implement companies has been in larger volume. The important textile industry which in 1924 had one of the worst years of its history, is feeling the stimulus of improved conditions, and the reduction in primary costs gives the trade better prospects for earnings. In woollen goods the situation is slightly better, and in silks, including rayon, relative prosperity prevails. The boot and shoe industry has been unsatisfactory for some time, but there is a general report of better business, and leather prices are firmer.

Mineral production records for Canada show a steady growth. Production of metals and non-metals reached a total value of $90,347,698 as compared with $84,307,385 in the first half of 1924. The output of gold for the six months was $14,506,219 as against $11,810,060, and silver 5,601,883 oz. as compared with 5,008,256 oz. for the corresponding period of the previous year. In British Columbia the production of non-ferrous metals, especially lead and zinc, shows a large increase, and at present market prices the total outturn for the first eight months of the year is estimated at $41,000,000 or only $7,500,000 short of the total value for the whole of 1924. The coal mining industry, after being completely disorganized by protracted strikes, is making rapid recovery and a better feeling is in evidence. Export

trade in lumber is quiet. The Maritime Provinces find it difficult to obtain satisfactory business against European competition. The Australian market appears to be satisfied, and the demand from Japan has fallen off. There is a steady increase, however, in shipments from the Pacific Coast to the Atlantic Ports of the United States, and domestic demand is expected to improve with western conditions. In the pulp and paper industry, production and shipments are ahead of last year. The production of newsprint for the eight months ended the 31st August is 988,764 tons as compared with 907,693 tons in 1924.

The value of building permits and contracts entered upon for construction work in Western Canada for the first nine months of the year show an increase of $3,583,000 over the figures of a year ago, although the figures for the Dominion for the same period are slightly lowered.

The usual statistics which reflect the current volume of business indicate a tendency to expansion. Carloadings and bank debits throughout the past two months have been well above the corresponding figures of last year. The agricultural situation is contributing in no small degree to larger and better balanced buying power. Wholesalers generally report increased turnovers, although in all lines buying is cautious and closely confined to immediate needs.

Commercial failures for the third quarter of 1925 show a distinct improvement both in number and extent of liabilities. Our foreign trade continues to show a growth that is particularly noteworthy. During September, exports amounted to $108,497,911—a considerable increase over $80,960,729 for the corresponding month last year. This represents a record total for this month since 1920. For the six months of the fiscal year ended September, total exports were $571,315,340 against $482,091,954 for the same period last year.

The comfortable position of the money market, the small fluctuations in commodity prices, light stocks of merchandise, the increased purchasing power based on good crops and a high state of employment are factors which collectively inspire greater confidence in the business situation.

The French Debt Negotiations

The failure of the United States to reach an agreement with France produces widespread disappointment, since there is now general appreciation of the necessity for the return of France to a condition of financial stability. Whatever merit is attached to the plan that France shall pay $40,000,000 a year for five years with remission of further interest during the period, lies in the suggestion that both countries are now more nearly ready to face the true situation. For France to reach the point where she is prepared to recognize her debts as far as her resources will permit, will constitute almost as much a step in advance, as for the United States, possessing half the gold in the world, to recognize the real conditions in Europe and the necessity for the adjustments necessary to permit her to begin to receive the goods in which ultimate payments must be made. Like the "Dawes Plan," this interim agreement bridges an awkward situation, and permits a lapse of time in which both peoples may grow accustomed to the idea that further concessions are necessary.

That France's capacity to pay may be even smaller than her own statesmen are willing to admit, constitutes one possibility which should be given careful consideration. So general is the recognition that France requires stabilization of her credit, that many well informed people thought that she might promise more than she could ever hope to perform in order to secure a settlement together with credits which would stabilize her finances and her money. At the last Mr. Caillaux offered much more than most Frenchmen felt France could pay, and it is quite possible that the ultimate settlement will be in some such terms as these which now seem too large in France and too small in the United States.

The fact that many financial and business periodicals such as the Chase Economic Bulletin and the Magazine of the American Chamber of Commerce, are beginning to give serious discussion to the possible methods of receiving payments from Europe, leads to the hope that this question will soon receive general serious consideration in the United States. All of the articles of the type point out that the present tariff barriers are so high as to preclude the possibility of substantial payments in goods, and suggest that the longer the United States maintains an export surplus, the more difficult the eventual payments will become.

On the whole it seems that none of the negotiations with the United States have laid sufficient emphasis upon the fact that these loans were made at a time when prices were high, or what is the same, when gold had a comparatively low purchasing power. Thinking of these matters in terms of commodities helps to clear the situation. Owing to this very difference in price level, the repayment by

Europe of commodities at their present gold value would imply the return of a volume of goods nearly twice as great as the volume of the same kinds of goods secured from the United States with these loans. When one considers the obvious reluctance of the United States to admit imports other than raw materials, tropical fruits and manufactured goods which cannot be produced in the United States, it is not surprising that debtor countries feel that most obvious channels of payment have been blocked by tariff walls.

What is to be the ultimate solution is a matter that must be decided in the United States, but it is quite encouraging to realize that business-men and bankers in the United States are giving these economic factors a careful consideration which may lead to new developments in the whole debt situation.

Had France and the United States arranged a permanent settlement, it is almost a certainty that it would have been accompanied by the revaluation and stabilization of the Franc. Without such an arrangement no settlement would have been considered satisfactory, and it might prove completely futile. Should the present arrangement result in a five year's deferment of stabilization, and should the uncertainty due to the outcome of the present conference result in so undermining the credit of France that further inflation follows, the result must be considered most unfortunate. Without financial stabilization, certainly there can be little industrial improvement, and without increases in production there can be neither foreign payments nor internal harmony.

A Canadian Budget System.

During the years 1920–25, while Canada's gross debt was decreased by $200,000,000, her active assets were decreased by $380,000,000, so that her net debt was increased by $180,000,000. In comparing this record with that of the United States, for instance, where there has been a decrease in gross debt from 25½ billion dollars in 1919, to 20½ billion at the present time, one must recognize the fact that the Budget Director, receiving the steady support of the President, has played no inconsiderable part in securing the result.

In June 1925, when speaking before the Meeting of the "Business Organization of the Government," the President of the United States said in part:—

"We have met this evening to take counsel together for the purpose of securing greater efficiency in Government by the application of the principles of constructive economy, in order that there may be a reduction of the burden of taxation now borne by the American people. The object sought is not merely a cutting down of public expenditures. That is only the means. Tax reduction is the end.

"The direct beneficiaries are composed of those who file the 9,000,000 tax returns. The indirect beneficiaries are all the rest of the American people, who must make an indirect contribution to the payment of the enormous sum of more than $10,000,000 every day in the year which goes out from the National Treasury. This is nothing more or less than a restriction upon the freedom of the people. This money has to be earned. Those who have earned it, instead of being able to retain it for their own benefit, must necessarily turn it over to the Government.

"Because this gigantic task is self-imposed, it is none the less a gigantic task. We are seeking to let those who earn money keep more of it for themselves and give less of it to the Government. This means better business, more of the comforts of life, general economic improvement, larger opportunity for education, and a greater freedom for all the people.....

"That first meeting was held at the end of the fiscal year 1921. During that fiscal year our expenditures, exclusive of the moneys applied to the reduction of the Public Debt and the operation of the Postal Service, amounted to $5,116,000,000. Our Public Debt then amounted to $23,977,000,000. We are now nearing the close of the fiscal year 1925. The expenditures for this fiscal year will amount in round figures to $3,035,000,000, and the public debt will stand at approximately $20,551,000,000.

"In the four years of operation under the budget system, the annual expenditures have been reduced to $2,081,000,000 and the Public Debt has been decreased by $3,426,000,000.

"The history of public affairs will hardly show a parallel case of retrenchment in the cost of government. Nor will such history show a more worthy motive. Back of this tireless, persistent and drastic campaign for constructive economy in Federal expenditure, has been the relief of the people of this nation from a great burden of taxation. It has been successful. Taxes have been reduced. The burden of the people has been materially lightened.....

"Economy in the cost of government is inseparable from reduction in taxes. We

cannot have the latter without the former. From some sources the statement has been made that this continuing drive for economy in Federal expenditures is hurting business. I have been unable to determine how reduction in taxes is injurious to business.

"Each tax reduction has been followed by a revival of business. If there is one thing above all others that will stimulate business, it is tax reductions. If the Government takes less, private business can have more. If constructive economy in Federal expenditure can be assured, it will be stimulation to enterprise and investment.....

"There are still reductions to be made. There are yet wastes to be eliminated. I expect you to prosecute a campaign of relentless economy to that end, not only in expenditures for 1926 but in the preparation of estimates for 1927. I am convinced that in this way lies the welfare of the people of this country. Fidelity to our oaths of office admits of no other course. Wastrels, careless administrators of the Government's substance, are out of place in the Federal Service. They will not be tolerated.

"If this policy means sacrifice -it is sacrifice for the benefit of 115,000,000 people. Their interests are paramount. Criticism by a few, who look askance at drastic paring down of spending, has little weight in the scale against the spontaneous commendation of the millions of people who have had brought to them with unmistakable clearness the result of such economy. And similarly, the strongly urged desires of a class should have little weight with you if adverse to the interests of the whole people."

With these words the President urged renewed interest in the process of decreasing public expenditure and greater effort towards tax reduction.

During the years of prosperity which permitted this successful debt reduction in the United States, Canada has been suffering from a prolonged depression which made it impossible to reduce the Canadian debt. We find ourselves, seven years after the end of the war, with a national debt of 2½ billion dollars. The load of national, provincial and local taxation has continued to grow until we are now faced by the necessity for a national policy of retrenchment. So long as each part of the country interested itself only in savings which might be effected in some other district, no great economies could be secured, but now the necessity for governmental economy has become a matter of such outstanding importance that a balanced budget must cease to be a party issue, and the time is ripe for all Canadians to unite in a decisive effort to reduce expenditure. Men representative of leading industries and business from all parts of Canada have expressed themselves as feeling that this is the paramount issue before the country to-day. Agriculture, industry and commerce have experienced prolonged, costly and discouraging depression, and are now ready for a season of recovery. It is exceedingly important that this recovery should be given the added stimulus which comes from reduced taxation.

Foreign Economic Notes.

Scientific Research.

Sir Thomas Holland, Rector of the Imperial College of Science and Technology, devoted his inaugural address in mail week, as the Chairman of the Council of the Royal Society of Arts to a survey of the organization of scientific research throughout the Empire. He took for his text the recent declaration of the Prime Minister on the necessity for scientific methods and scientific men to take their place in industry, and an equal place with the administrator and the financier, if British trade is to be strong enough for the shocks that it is bound to meet as the years go by. On the Indian side of his subject Sir Thomas Holland spoke with unrivalled authority from his long experience in that country as head of the Geological Survey, as Chairman of the Industrial Commission, as President of the Munitions Board during most of the war, and later as Industries Member of Government.

Sir Thomas pointed out that in India the necessity of co-ordinating official activities in scientific research was recognized 22 years ago, when a Board of the principal officers of the scientific departments was formed, with Sir David Prain as Secretary. Following the expansion of scientific services devoted to the investigation of raw materials, the Government of India in 1916, stimulated by the demands of the war on Indian resources and by the development of national sentiment in favour of industrial development, appointed

the Industrial Commission already mentioned. The report commended large increases of the scientific services based on an extension of technological education, with a scheme for the co-ordination of private as well as official work, both Imperial and provincial.

The scheme did not mature, owing in the main to the great political changes for which the Government of India Act of 1919 provided the framework. In the allocation of functions between the Central and Provincial Governments and the "transferred" sides of provincial diarchy there was failure, in Sir Thomas Holland's competent judgment, to recognize the fundamental distinction between advisory and executive functions. In advisory work the requisite degree of thoroughness can be obtained only by employing specialists, and Sir Thomas Holland is convinced that these cannot be maintained in sufficient variety by each of the nine quasi-autonomous provinces, with their problems of unlike nature. It is worth noting in this connection that the great cotton-growing industry, in which India stands second only to America in total production, pays a small cess upon the whole of the commercial cotton crop to provide for the Indian Central Cotton Committee as a connecting link between the traders and the agricultural experts, and also to serve as an advisory body to the Government on all questions affecting cotton.

The policy of provincializing industrial research of all sorts, without discrimination was adopted in the rules framed in 1920 under the Act of the previous year. Most of the proposals of the Industrial Commission were thereby rendered difficult of application, and such central organizations as the proposed Indian Chemical Service have not been established. Sir Thomas Holland suggests that no modern country can face the commercial competition of peace time or defend itself in war by merely repeating maxims of political theory. India, he says, is now being duped with fiscal protection instead of being prepared by industrial training to develop its own natural resources in a healthy way.

That a demand exists for such training is constantly shown. The Indian publicist is usually more ready to put forward the plea for wider scientific and technological opportunities for students than to consider practical methods of making such training effective and relating it to Indian conditions. The Calcutta University Commission heartily favoured the inclusion of practical scientific studies in the curriculum of the institutions which are recognized as giving the highest forms of training for various careers. But the Commission uttered a necessary warning against the assumption by any university of technological training without adequate equipment or a fully qualified staff. There has since been relatively little progress in this direction, though courses in applied or industrial chemistry have been adopted at several universities.

A large and constantly growing number of young men leave the colleges of India without finding scope for careers they desire to pursue. This is largely because the vast agricultural tracts of the country do not yield their increase to any extent comparable with their possibilities if scientific methods were applied and education were generally diffused amongst the people. The ambition of patriotic Indians is for the country to be much more self-dependent in manufacturing industry. Sir Thomas Holland warns them that if the present course is followed India will become still more dependent on outside sources. The country will be forced to go outside for its requirements in some forms of food, as it is doing already on a large scale for sugar. Natural indigo, formerly exported in large quantities from Behar, was displaced before the war by the chemical product of European science as developed in Germany.

What science has done in Europe it should be able to do still better in a country with natural climatic advantages, but this, as Sir Thomas Holland says, will not be by processes which are translated unmodified from other countries. Improvements in agriculture and processes of manufacture must be based on research in India itself under Indian conditions, not on reports made on samples sent, for instance, to the Imperial Institute. The requisite number and variety of specialists, with their equipment for research work, can be maintained only by the co-operation of all the provinces. Recent movements in India have been in the opposite direction.

Future of Road Transport.

In delivering the 12th annual Thomas Hawkesley lecture at the Institution of Mechanical Engineers recently, Sir John A. F. Aspinall said everyone was aware of the way in which railway traffic had been affected by the use of the modern motor vehicle. It seemed probable that the swelling volume of motor traffic would create its own blockade, and that certain classes of traffic which had been diverted from the railways to the roads

would be recovered by the railways. The future congestion of the road system could be estimated by the fact that there were now about 1,250,000 licensed motor vehicles operating on a total road mileage in England, Scotland and Wales of 178,000 miles, which gave 6.98 machines to the mile. The rate of addition to the total stock of motors might be estimated at about 200,000 a year. If this continued for ten years the density of road traffic would be increased to 18 vehicles per mile if the traffic were equally distributed over the whole country. That would not be the case, and the congestion in and around the big cities threatened to be beyond the capacity of any traffic authority to handle. In making the above prediction, Sir John appears to have left out of account the development of road capacity. But if they do not prove Sir John's case the figures quoted serve to emphasize the importance of the progressive policy so ably advocated by Sir Henry Maybury. It is more than ever clear that every penny of the Road Fund will be needed for its legitimate purpose.

New Methods of House Construction.

In his presidential address, before the Institution of Structural Engineers recently, Sir Charles Ruthen, Director-General of Housing, said although anxious to avoid any statement that would stamp any particular new method of permanent house construction as superior to others, he was prepared to state that there were quite a number of concrete methods which almost entirely complied with the requirements. During the past 12 months or so no fewer than 20,000 houses of various new and alternative methods of construction had been erected in various parts of the country. This indicated that a serious effort had been made and was still being made to supplement the output of brick houses, and he felt confident that the experience gained would be of lasting benefit to national housing as well as to the ultimate benefit of all classes of building work, and all ranks of the building industry.

Suspension of Indian Cotton Excise.

The news of the suspension of the Indian cotton excise duty as from December 1, 1925, is not likely to occasion any great surprise even in Lancashire, as it was known that the duty was to be abolished as soon as financial considerations permitted. The official announcement issued by the Governor-General in India states that the Government of India are satisfied that there would be no serious risk of a large deficit on the current year if the duty were suspended, and that step has therefore been taken, and it is proposed, unless the financial position as disclosed in the Budget estimates for the next year substantially fails to confirm the present anticipation, to place before the Legislature, at the time of the Budget, proposals for the abolition of the duty. I suppose that it is probable that we shall hear protests from Lancashire at this decision, but it is to my mind extremely doubtful whether the removal of the duty will affect the cotton county to the extent that Lancashire would appear to anticipate. Lancashire's trade with India is in the better class cotton goods while India manufactures cheap cottons, and the only way in which Lancashire could be affected would be if the price of the lower quality goods was so reduced that buyers were attracted to them to the exclusion of better goods.

The Liberal Land Report.

Mr. Lloyd George has been crusading over Scotland on a land campaign. Mr. Baldwin has described that land policy as a "cold linseed poultice": another eminent Conservative, Mr. Garvin, has, in his sabbatarian illumination, described it as "the vigorous preparation of a very hot mustard-plaster". It is possible that the Prime Minister, who, as he recently confessed, was brought upon pickled onions, knows something more of agriculture than Mr. Garvin, who brought himself up on pickled politics: but that remains to be seen. According to Mr. Lloyd George, landlordism is in ruins and nothing in the way of doles or of subsidies can save it. What was the remedy? The acquisition of the soil by the nation. This was not nationalization, for development of the soil would be left to private enterprise. The monopolist must be got rid of: it was an outrage that alien chiefs, who could not stand a Highland winter, should be lording the Highlands. This last reference was the inevitable particularization of the speaker's general policy. That policy, as detailed in the rural report of the Liberal Land Committee, published recently, is to "cultivate tenure" as the panacea for present ills. According to these Liberals' view, cultivating tenure would secure for the landlord an income equal to the net income which he now derives from the land. The farmer, moreover, would have the legitimate rights of ownership without its risks, and the advantages of yearly tenancy without its insecurity. And for the British labourer, who is to-day the only landless peasant in Europe, cultivating tenure meant the recognition, for the first time in any British

agricultural policy, of his real status and function in the industry and in the nation. Most of the comment upon this Report and upon Mr. Lloyd George's land speeches have been in two senses: first, a particular criticism, that security of tenure to the farmers is useless without security of price, and secondly, a general inference, that this remedy is Socialism undisguised, that there is now little to divide anti-Communist Labour from Liberal, and, therefore, that the two-party system is well on the way to being restored.

The Income-Tax.

The words of politicians again occupy a considerable space in the newspapers, and, it must be confessed, in the thoughts of normal citizens, but of the speeches delivered recently, none was read with greater attention than that of Mr. Churchill, at the Colchester Oyster Feast. Without doubt, the interpretation placed by most people upon the speech of the Chancellor of the Exchequer is that next year we shall be re-burdened with that sixpence in the income-tax which this year we had been mercifully, but, as it may appear, prematurely, spared. Whereat there are much shaking of heads and gnashing of teeth.

The only hope of an averting of this evil seems to lie in the accomplishment of the Prime Minister's Economy Committee, but the difficulty in this matter comes from the fact that armaments, on which alone most observers see the possibility of a reduction in expenditure, are expressly excluded from the Committee. It is a curious and almost unique sense of humour that enables Mr. Winston Churchill, whose optimism in regard to general trade conditions is almost unbounded and is even dogmatically stated, to speak jestingly about the future of the income-tax: for it is the last thing in which the Englishman will see any fun.

Beet Sugar.

Just as, in the seventeenth century, it was men of the Low Countries who came to show this country what could be made of East Anglia, so, again Dutchmen have come to show us how little we understand the potentialities of our land. As everyone knows, a beet sugar factory was started a year or two ago at Cantley, near Norwich, by Dutch capital, and last week a similar institution was started in a similar way at Ely. Shortly, moreover, a sugar-beet factory is to be started at Bury St. Edmunds—this time owing to Hungarian enterprise.

As a matter of fact, the high opinion that foreign sugar-beet growers have of the English climate appears to be thoroughly justified. The crops of sugar-beet in Eastern Counties which are now being harvested, are excellent, and there seems no doubt that an increasing number of farmers will adopt this new thing. Nor is it only private farmers who are looking less askance at this importation from abroad: the Ministry of Agriculture is thoroughly awake to its possibilities.

Taxation of Foreigners in France.

At the board meeting of the British Chamber of Commerce, held recently, the Chairman, Mr. J. H. Coleman (the vice-president), referring to the numerous and urgent representations made by the Chamber on the subject of the discrimination against foreigners made by Article 44 of the French Fiscal Reform Law of March 22 last, announced that official information had now been received of a decision in the matter of taxation that British subjects should be treated in the same way as French citizens.

Big Prizes in the Literary World.

It is still constantly said that authorship is a poor trade, with "no money in it". And it is true that authorship is not, as a rule, a short cut to affluence. Nor, for that matter, is any other profession. The men who get to the top of the tree in commerce, the law, medicine, engineering, painting, and the stage, may earn very big incomes. A few famous barristers and medical men earn anything from £20,000 to £50,000 a year. But it is not every barrister who becomes Attorney-General, nor every doctor who can be a Harley-street consulting specialist, nor every student at the Royal Academy of Music who draws a vast audience to the Albert Hall.

Literary men and women take quite a fair share of the big prizes. The immense book-reading, playing-going, magazine-buying, and cinema-seeing public can offer highly substantial rewards to those who find favour in its eyes. There must be to-day at least a dozen English novelists and dramatists who are earning upwards of £10,000 a year, and there are from twenty to forty, or more, of the playwrights, novelists, essayists, biographers, and miscellaneous writers whose incomes are well over the £5,000 line. I doubt—writes an author in the *Daily Mail*—whether any of the other professions (including the Bar) could make out a better list.

And if a man is satisfied with a moderate competence, he is quite as likely to attain this end through literary labour as by most other

activities. A solicitor, a doctor, an accountant, a university professor, a bank official, an architect, an engineer, a civil servant, making a regular income of from £1,200 to £2,000 a year, would not regard himself, or be regarded by others, as a failure. There are hundreds of writing men and women whose earnings lie between those figures.

THE PAGE LETTERS AND LORD READING.

A London correspondent writes :—By arrangement with the publishers, the *Manchester Guardian* is publishing here the letters addressed by Mr. Walter Page, the American Ambassador to Great Britain during the war, to President Wilson, and which have been issued under the editorship of Mr. Hendrick. In the course of one of these, dated January 16, 1918, he makes interesting reference to Lord Reading as the following extract will show :—'Dear Mr. President,—You know Lord Reading and have taken measure of him, but the following facts and gossips (Lord Reading has recently been appointed British Ambassador Extraordinary to the United States) may interest you. He is one of the ablest Englishmen living—everybody concedes that. See and compare the view taken of Disraeli, the other Hebrew earl, by his political enemies. As between the two, my judgment would be in favour of Reading. He is not so spectacular as old Dizzy was, but he is far sounder. I doubt if Dizzy was honest, and Reading is. He is one of the most brilliant and able members of the bar. He has himself told me that he worked from early hours to early hours again, day-in and day-out, for years—a prodigy of industry. He became skilful especially in financial cases, and his fees were prodigious. I think that there is no doubt that, to do a concrete job, Lord Reading will succeed, during war-time, better than any man who was considered for the post.' In this connection it should be noted that Mr. Page says that Lord Balfour, Lord Grey, and Lord Northcliffe had all previously been approached and had refused the appointment, all of which must have been known to Lord Reading before he accepted the onerous task that drew him from the Court of the Lord Chief Justice. Finally, referring to the fact that the Archbishop of York was also visiting the United States at the invitation of some of the American ecclesiastical organization, Mr. Page remarks : 'The Archbishop at one end of the line and Lord Reading at the other—they make good representatives of notable England.' It is interesting, too, to observe a prophecy by Lord Grey, even in the days before the war that Labour in a decade would control many Governments.

BERNARD SHAW ON BOOK PRODUCTION.

Bernard Shaw says he always uses the largest type possible, set solid. He says that what people want is not larger type but leaded lines, and against this he argues that "what tries the eyes in reading is not the black on the page (the letters) but the white (the leads)." "I wonder," says he, "how many of the people who are so pernickety about their eyes do as I very carefully do ; that is, write and type on green paper, never on white. When greater contrast is convenient I use yellow paper. When I write in full sunlight in the open air I use strongly tinted green spectacles, and on other occasions lightly tinted ones. If books were printed, as they should be, on definitely green or yellow (not 'toned') paper, the relief to bookish eyes would be enormous." As a final shot, he adds : "The horrible white margins to our engravings, and the equally ugly bands of white between the lines in heavily leaded type, are simply collars and cuffs, fronts and spats and slips, applied to pictures and books."

The Viceroy Designate.

Mr. Wood comes out at the early age of forty-four. Warren Hastings became Governor-General at forty-one. Dalhouise, Wellesley and Curzon may be considered to be the youngest of our Viceroys for they accepted the Viceroyalty while they were thirty-five, thirty-eight and thirty-nine respectively.

But Hastings and Dufferin were fifty-eight and fifty-nine when they took up the reins of Government in India. And our present Viceroy Lord Reading at sixty-one came to India. But the history of the office is not too bright. As one writer put it "Cornwallis and Elgin died in India. Mayo was murdered, Hardinge only escaped by a miracle from the same fate. The first Minto, Dalhousie and Canning returned worn out to die." But good conditions have changed in India tremendously, and though the strain, in many ways, is heavier the Viceroyalty need not be damaging the physical energy as it was, and Lord Reading at sixty-five gives the bright side of the shield,

Indian Economic Notes.

Banking Education.

Sir Basil Blackett, the Finance Member, laid considerable stress on education in his recent address to the university students of Delhi. Said Sir Basil:—"The question of most immediate importance for securing progress seems to me to be the question of banking education, so that not only may trained Indian bankers become available to meet the needs of the Imperial Bank and banks run on western lines, but also that private banks may use the advantage of giving proper training to members of their staff and junior partners. A banker requires above all, integrity, honesty and uprightness of character and a high sense of responsibility to the public. But it is a lamentable error which in India perhaps even more than in other countries regards a commercial and industrial career, in which I include a banking career, as beneath the dignity of an educated man, and drives graduates to seek safety in a government billet or to turn themselves loose on one of the so-called professions, instead of adventuring themselves in business where if a man can but escape the virus of the get-rich-quick disease, there are opportunities of public service no less honourable than in law, politics or government employ. But banking involves an apprenticeship. It cannot be taken by a graduate or anyone else in his stride. As pointed out by the External Capital Committee, theoretical and practical training will have to be combined. One of the difficulties is that the classes concerned with the indigenous banking system tend to hold aloof from western education and university training. It would seem most desirable to create a definite association for the purpose of supervising banking education rather than leave the question entirely to the Government or the Imperial Bank. An All-India Institute of Bankers has been recommended by the External Capital Committee, and I am glad to know that active steps are being taken with a view to the establishment of such an institute. Such an association could become responsible for banking education in the widest sense; admission to its body might be conditional on the passing of its examination and it might be responsible for developing more specialized banking education. It could run a magazine to which contributions would be invited on subjects of interest about banking in India. It might offer prizes for essays on practical subjects connected with banking and give scholarships for the training of selected students outside India. It might hold periodical meetings at which subjects of general banking interest could be discussed. The institute might also be responsible for banking statistics. It might, perhaps, be empowered to register banks as associates in addition to individuals and thus give indigenous banks the benefits of some system of partial registration. Clearly such an institute could give valuable assistance to the Government in the elucidation of banking question. I may add that proposals are now also under examination for the formation of an All-India Institute of Chartered Accountants would add greatly to the facilities for procuring well-equipped personnel for Indian monetary, industrial and commercial activities."

Government Control of Banks.

Sir Basil added: "The External Capital Committee, while not making any definite recommendation, suggested the desirability of examining the question of some form of government control over banks generally. This is a question which has frequently been considered but hitherto the idea has been abandoned in view of the practical difficulties of making control effective. There are, of course, many arguments for and against, but this again is a subject of which examination seems very desirable."

Indian Customs Revenue.

According to returns received in the Department of Commercial Intelligence and Statistics, the grand total of gross Indian Sea and Land Customs Revenue (excluding Salt Revenue) during the month of November, 1925, amounted to Rs. 4,21 lakhs, as against Rs. 4,62 lakhs in the preceding month and Rs. 4,55 lakhs a year ago. The total revenue realized in the eight months, April to November, 1925, was Rs. 31,48½ lakhs, as compared with Rs. 31,75¾ lakhs in the same period last year. Import duties contributed Rs. 25,24 lakhs; export duties Rs. 3,67 lakhs; excise duties on cotton manufactures Rs. 1,17½ lakhs, on kerosene Rs. 65 lakhs and on motor spirit Rs. 53 lakhs; and land customs and miscellaneous Rs. 22 lakhs. Increases were noticeable in import duties on sugar, mineral oils, pneumatic rubber tyres, motor cars and cycles, cutlery and hardware and liquors; in export duties on rice,

raw hides and skins, jute (raw and manufactured), and tea ; and in the excise duty on kerosene. On the other hand, import duties on cotton yarn and piece-goods, iron and steel and other metals, railway plant, tobacco, matches and match splints and veneers and silk piece-goods, and the excise duty on cotton manufactures showed important decreases. The protective special duties collected on private imports during the eight months, April to November, 1925, amounted to over Rs. 1,65 lakhs. The duties on Government stores amounted to Rs. 58 lakhs inclusive of the protective duties, as against Rs. 29 lakhs in the eight months ended November, 1924.

The Currency Commission.

The Currency Commission began work at Bombay. The evidence so far received follows traditional opinion in Bombay. The Bombay Chamber of Commerce is anxious to have a stable external ratio and to avert the danger of dislocating internal price levels ; the Indian Merchants' Chamber favours the establishment of a gold standard with a gold-mohur currency ; the Bombay Millowners' Association expounds the importance of a low exchange ; and the Bombay Professoriate has tendered evidence for the eschewal of the gold exchange standard. In the conflict of opinion, we would give prominence to the evidence of Mr. Kikabhai Premchand who rules as an important firm of exchange, bullion and finance brokers. He emphasized the need of stability in internal prices in preference to a continuous level of rupee-exchange as "the vast majority of the Indian population is only indirectly affected by foreign exchange rates". The question whether a high exchange prejudiced Indian manufactures or a low exchange injured the exporting interests of an agricultural country, there has been no conclusive answers from economists. On that subject the Premchand Roychand firm gives the following answer :- "This is an extremely broad question which might lead to endless discussion if one attempted to treat it exhaustively. In merely stating our opinions on the various points raised, we are basing our judgment on personal observations and impressions rather than attempting to substantiate our contentions by recourse to the almost endless statistics that might be brought to bear on the subject. "A rising rupee reflects improved trade and a substantial demand for India's products. It reduces costs of all imported articles, facilitates the repayment of debts abroad, makes far more favourable governmental budgets and thereby opens the way for tax reductions. Although somewhat detrimental to indigenous industries that must meet foreign competition, we must bear in mind that ours is primarily an agricultural country, and furthermore that Government is now committed to a policy of discriminate protection. A falling rupee encourages increased purchases of our products by foreign consumers and discourages imports from abroad. This, however, is only a temporary, artificial stimulus to trade, which is usually followed by periods of depression as internal price levels rapidly adjust themselves to the new exchange ratio, Government's obligations being more difficult to meet, increased taxation becomes almost inevitable."

Gold Standard for India.

"The present currency situation" was the subject of an interesting paper read by Mr. B. R. Rao, Lecturer of the Calcutta University, at a special meeting of the Bengal Economic Society held recently, in the lecture theatre of the Asutosh Building under the presidentship of Dr. Pramathanath Banerjea, Minto Professor of Economics. The meeting was largely attended and the main discussion centred round the question of the Gold Standard. In his paper, the lecturer gave a historical retrospect of India's currency and dwelt upon the return to the Gold Standard by England and other countries. Mr. Rao then referred to the position of the rupee and advocated the Gold Standard as the best for India. While opposing the introduction of the Gold Standard, Mr. B. B. Das Gupta urged that efforts should be directed for maintaining a stable price level. Mr. H. Sinha who opposed both the speakers on certain points quoted the late Mr. Gokhale and said that when the value of the rupee was raised, though a low amount was received as Home charges, more were taken in the shape of taxes. He also pointed out that it was easier to manage with gold than silver. Dr. Banerjea, while summing up the discussion of the evening, said that by raising the value of the rupee the Government took a larger amount from the people in the shape of taxation. He advocated a lower rate as it was favourable for many indigenous industries. The president concluded by saying that politically and economically the Gold Standard was the best for India.

Swedish Matches.

The Swedish Match Company, which has an office in Bombay, has purchased the Stockholm Superphosphate Company's Maansbo works at Dalarne, including waterfalls and

factories. The price will be about 4,000,000 kroner. The Maansbo works, which have been idle for several years, will now be utilized for the production of chloric acid and potash, adding 4,500 tons annually to the 6,500 now produced at the match company's works at Alby and Trollhaettan. It is presumed that this will be mainly required for the match company's Indian ventures.

Bombay Factories.

According to the annual report on the working of Bombay factories, there was in 1924 an increase in number. In 1923, the province contained 1,120 factories while in 1924 they rose to 1,211. It would be wrong, however, to infer that there was greater activity because of the larger number of factories. The number of operatives showed a decrease from 3,56,480 to 3,54,853. The match industry registered an increase in the labour force of 3,000 operatives. There was a fall in the number of children employed. Factory children were reduced from 11,411 to 9,779, stringent measures being taken in Ahmedabad to repress the practice of engaging children on the double certificate system. In all there were 43 accidents involving 82 deaths, and the inspectors tried to popularize the use of automatic guards for preventing serious accidents. The problem of better ventilation in mills engaged the attention of factory managers, who were advised to use Kata thermometers as "comfort meters". The report makes special mention of progress in the mills of the Sholapur Spinning and Weaving Company. The hottest belt of the spinning mills was served a ventilation plant dealing with 1,50,000 cubic feet of air per minute. For a complete air-change the plant takes only 2½ minutes. Other mills have now something to emulate for the improvement of labour efficiency.

Contemporary Studies—A Review.*

By C. Hayavadana Rao, B.A., B.L.

This is a welcome volume of essays by a French writer who deserves to be better known in this country. His views are refreshing to a degree and even when you disagree from some of them, you do so most cordially. The book is divided into four parts. The first part is devoted to the liberators of the Mind; the second to the late War and the Peace which concluded it; the third to Education and Society and the fourth to Art and Criticism. In Part I, we have a brief review of Tolstoy's *Diary* from which we take the following few sentences:—"We must conquer death—not death itself, but the fear of death, the fear which comes from a failure to understand life. When we understand life, and understand that death is its beneficent and inevitable end, we no longer fear death and no longer resist its coming. And when we have ceased to fear death, we no longer serve our mortal ego. We devote ourselves to the service of the immortal being, the service of God, from Whom we proceed and to Whom we return." Tolstoy was a great educationist. Baudouin writes:—"Education seemed to him more important than ever, for in his view it must be the chief instrument of Social Reform." Again, he adds:—"He loved teaching, believed in it, expected it to give splendid results." He taught children at his house and enjoyed, we are told, a sense of perfect satisfaction when he "busied himself with children". Tolstoy was a realist and his faith was that of a realist. This idealist faith of Tolstoy is well brought out by our author in a special chapter devoted to it. Tolstoy wrote, we are told, in his preface to Bondareff's *Le travail*:—"The leading thought of this book is this: In all the circumstances of life, the essential thing to know is not what is good and necessary, but which thing, among those that are good and necessary, is of the first importance, which should come second, which third, and so on.....Before we provide people with priests, soldiers, judges, doctors, teachers, we should find out whether they are dying of hunger.....No one for whom the significance of life is to be found in the service of others could possibly go so far astray as to believe that he could serve those who are dying of hunger and cold, by writing laws for them, by making cannons, by producing luxuries, or by playing the fiddle or the piano. Love cannot be so stupid." Our author comments piquantly: "Even though such realism (of Tolstoy) may not fulfil all the needs of our spirit, there can be no doubt that

*. *Contemporary Studies*:—By Charles Baudouin. Translated from the French by Eden and Cedar Paul. Messrs. George Allen and Unwin, Ltd., 40 Museum Street, London, W.C. Price 12*sh.* 6*d.* net.

it fulfils those which are most urgent. The realities of the Western world—the modern world—are harsh, oppressive and cruel; nevertheless we must ballast our ideal with realism. That is why we have need of Tolstoy's message to-day."

Mons. Baudouin writes helpfully on Nietzsche's *Letters;* they give us, in his opinion, a fuller revelation of the Nietzsche we already know: we see a man of sensitive spirit, susceptible and vulnerable, infinitely and exquisitely human, all-too-human; a very different Nietzsche from that of the crude image set up by those who did not know him, sketched after the model of the ogre in a fairy tale. The chapter should be read as a whole; its contents cannot be retailed here. In Nietzsche, the thinker is, above all, a "living man". His wisdom is by turns, passionate, suffering, enthusiastic and joyous. It is alive. Its development resembles that of a tragedy than that of a theorem—and this is why it is so captivating. He glorifies self-mastery. Nietzsche may say harsh things of Socrates and Plato, but nevertheless he exhibits many of the traits proper to the archetype of the Greek philosopher. In one of his letters, having just re-read Plato, he expresses his surprise at the way in which his own Zarathustra "Platonises". A little later we find him sympathetic towards Pythagoras' rule of silence. Nietzsche writes from Genoa in November 1883; "I have come to recognize that there is nothing to be prized more highly than a *tenacious will,* for which ten years would not be too long, were they to be ten years of silence." The vow of Silence of Hindus is well-known. Mahatma Gandhi's "Silence Day" perhaps, can now be better understood with this view of acquiring a *tenacious will* of Nietzsche before us. One other point before we leave this part of the book. Mons. Baudouin makes plain the utterly unsubstantial character of the view that depicts Nietzsche as a "pan-German". He quotes the following from a letter dated December 28, 1888: "I am working at Promemoria for the European Courts. It concerns the establishment of an anti-German league. I want to encircle the 'Empire' with a ring of iron, and to provoke it to a war of desperation." How prophetic an utterance we need not say.

Our author's study of Spitteler is a fine one. The picture of this great "European poet", "international poet", is drawn with great skill. He applies to Spitteler what Edward Carpenter said of Walt Whitman, that he is as difficult to overlook as a mountain. Spitteler cannot be overlooked. Nietzsche valued him highly and Romain Rolland says of him: "He was the first great man I saw."

This brings us to Mons. Baudouin's study of Romain Rolland himself. He concludes an exquisitely written paper on him in these words:—

"But the most intimate bond between the various writings, so amazingly different, which Rolland gave to the world during and just after the war, is to be found in the passion for liberty. The spirit of liberty has but few weapons for use in the fight against the dogma of the nationalist state, against the beast-idol which has us under its feet, and which crushes us even more effectually than do any of the superstitions that have come down to us from the past. Liberty's weapons are: the fervour of *Au-dessus de la melee*; the serene intelligence of *Empedocle*; the hearty and sensible laughter of *Colas Breugnon*; the biting and satirical laughter of *Liluli*. The laughter of *Liluli* is the sharpest weapon, and perhaps the strongest of the four. Freedom of thought brings freedom of art in its train. This is the secret of Rolland's changing and multiform art, which is not bound by the fetters of tradition, and is even free from the shackles of habit, from those ties of habit which, for persons of conventional mind, seem to become obligations. Nevertheless, in his love of freedom, in his unconventionality and in his irony, Romain Rolland is always the Frenchman. He has not been uprooted from his native land; he is Colas, the Burgundian; on occasions he can be as much of a particularist as Barres. Though the tree-top may respond to all the breezes, may receive all the messages that are wafted from the vast freedoms of space, the roots of the tree are firmly fixed in native soil. What if to-morrow, or the day after, Rolland should come to be regarded as the most typical Frenchman among the writers of our own day? He would have the laugh of us all!"

Chapters of political interest are taboo in this review but the interested reader will find much to engage him in the suggestively written paper on the 'East against the West'—a subtle analysis of English psychology and Russian mind. Similarly we would pass over the third part of the book altogether except to remark that it contains an excellent paper on "Bahaism"—which he describes in the language of H. Dreyfus, the French historian of the movement, as "religion renewed" the only possible basis for a mutual understanding between religion and free thought. If modern

civilization is a "nullity, as proclaimed by Rousseau, Carlyle, Ruskin, Tolstoy and Nietzsche, is there nothing for the West to learn from the patient East? That is how Mons. Baudouinstarts his paper and the reader may prepare himself for an intellectual treat in the disquisition that follows. Bahaism is not only an ethical system, a system of social morality, but is also "permeated with a sane and noble mysticism; nothing could be more firmly rooted in the inner life, more benignly spiritual; nothing could speak more intimately to the soul, in low tones, and as if from within." Two years before his death, Baha'u'llah wrote (in 1890):—"Let all the nations become one in faith, and let all men be brothers, in order that the bonds of affection and unity between the sons of men may be strengthened What harm can there be in that?..... It is going to happen. There will be an end to sterile conflicts, to ruinous wars; and the Great Peace will come!"

We have, we think, said enough about the excellence of Mons. Baudouin's essays. We will permit ourselves only one quotation before we close; we do this the more readily as it relates to Child Education. "The child's education" writes our author, "must be permeated with artistic education." There can be no real education without poesy. Moreover, those who would understand the child, and perhaps those who would be understood by the child, must be poets, as the child itself is a poet. Substantially this is what Pierre Bovet tells us. Every true teacher has the soul of an artist. The teacher who is lacking in this respect can hardly—I say it unhesitatingly—be regarded as an expert in the profession." Mons. Baudouin's book is a book to read—and to re-read.

Books in Brief.

Short Reviews of Recent Books.

India's Exchange Problem.

In Two Parts, By A. S. VENKATARAMAN, B.A. PART I.—*India's Exchange Problem.* PART II.—*Exchange Fallacies Exposed* by B. F. Madon. Printed at the Commercial Printing Press, Bombay.

At an opportune moment just at the eve of the sittings of the Royal Currency Commission, Mr. B. F. Madon, the Bombay Economist, has come out with his publication on the Indian Exchange Problem. If in many ways, it is an *apologia pro vita sua* of the 1*s.* 4*d.* rate, it is also a direct challenge to the Government's position.

One argument after another of the Finance Member is taken out for analysis and the author gives a crushing reply to each highly supported by facts and figures. Probably, the Finance Member will have to hail in him a foeman worthy of his steel. Each proposition that he states, each argument that he advances is direct and telling. It is a sledge-hammer stroke, not a rapier thrust. Without being necessarily anti-Government, he subjects every argument advanced by the Finance Member to a close scrutiny and minute analysis. Were Sir Blackett a Shakespeare, Mr. Madon is more than a Bradley, only in this case, the commentary is of greater value than the original and reads between the lines, often to the latter's detriment.

The first part of his publication, *viz.*, *India's Exchange Problem* was published in April, 1925. Explaining the Rupee as token though unlimited legal tender, he shares the view that the 2*s.* rate is a fraud on all debtors and that the manipulation of the currency was unjustifiable in the interests of the so-called consumer because it amounts to robbing Peter to pay Paul. In describing the rise in Exchange, he shows how the way to raise the rate of Exchange was to make the supplies of Rupees scarcer during the past five years. In his opinion the real object of Reverse Bill Sales was to raise the exchange by means of artificial contractions of currency. The Paper currency operations are compared to the warehousing operations.

The three methods of Prof. Jevons for the contraction of currency, *viz.*, sale of Reverse Bills and cancellation of currency notes, (2) realization of the metallic portion of the reserves, (3) sale of the securities of the Government of India in reserve, are taken up for examination in detail. They were the guiding factors in currency policy, notwithstanding any announcements from time to time.

The existence of the 2*s.* ratio is compared by the author to an irrigation channel weir. The author points out how the supplies were pumped in and pumped out, £5.85 millions pumped out,—£12 millions pumped in, £12 plus £2 millions, available for pumping operations, the proposal to pump out £10 millions in summer (1924).

In his "Exchange Fallacies Exposed", being the second part of *India's Exchange Problem*, the author on an elaborate scale, examines in detail the currency policy. The able and exhaustive statement and defence of the policy of the Government of India on the occasion of the Budget (1925-26) by an exalted functionary as the Finance Member, is taken as the considered and authoritative exposition of the Government's policy. One after another of the points raised in defence by Sir Basil Blackett is subjected to a scholarly analysis. To mention only a few, far from "injustice" being done to "innocent people" (who had entered into contracts at 1*s.* 6*d.*), greater injustice was being done by going to an 1*s.* 6*d.* to millions of people who had entered into contracts on the 1*s* 4*d.* basis—all long term debt contracts, all mortgages or debenture debt, leases of rural or urban property, survey settlements of land revenue with an

annual liability for interest, rent, etc., to the extent of 175 crores. The claim relating to stability of prices made by the Government is closely investigated and shown to be false, by reason of the fallacy underlying Index-figures, inasmuch as the prices of food-grains, oil-seeds, jute, etc. (87% of the cropped area), were kept down. Again, the stability of Exchange has been unduly emphasized by the Finance Member. It is a matter for exchange banker and import or export merchants. The Exchange, high as it has been, far from reducing India's foreign debt, really increased the internal Rupee debt. In the name of stability of Prices, the Exchange was continually rigged up or down, even after England by her resumption of the gold standard abandoned the system of managed currency. Low prices are advantageous to the Government servants and Railway employees, the position of the rest depends on business in trade and industry, as good wages and good prices go together. Hence the keeping down of prices really meant a keeping down the wages of agricultural labourers (the majority of the people in India are so). The consumer, referred to by the Government, was only a microscopic minority. Owing to this manipulation, the Producer (agriculturist) really loses 80 to 100 crores, the wealthier, capitalist classes and even non-Indians gaining at his expense. Sir Basil Blackett professes some sympathy for the interests of the tax-payer. He is really the Producer, first, last and always. If it is feared, that the revenue will suffer a diminution by the reversion to 1*s.* 4*d.* ratio, expansion in other items of revenue will make them up, such items being industrial profits, salt, opium, Railways.

The producer, far from getting the same number of Rupees every year, is really a loser by reason of his precarious work. Even if it were so, it meant a constant rigging of Exchange up or down—a most undesirable state of things. The effects of high Exchange are temporary only when the goal is the normal par of the country; but when it is put above the pre-war par, it vitiates all long term commitments and the effects on industry and agriculture, far from being temporary, will be permanent leading to insolvencies, liquidations on an ever-increasing scale. Two salient points that the author wishes to emphasize are: (1) the purchasing power of the Indian masses remaining at a low ebb in spite of four successive very favourable seasons and the enormous balances of trade in favour of India, (2) the reason why Japan under-sells Indian cotton mills so heavily as it seems to be able to-day. Both of them according to the author, are due to the Government's Exchange policy.

The brochure, on the whole, is a valuable contribution to that vexed of Indian currency and the author should be congratulated on the successful manner in which he has exposed the Exchange Fallacies. Without being abstruse and technical, the language is bound to appeal to the popular mind. If it is true, that only great authors can write good primers, it is eminently so in this case. It must also be said to their credit, that the two parts of the book by the author are useful both for the layman and the scholar, and should be in the hands of every economist, financier and legislator in the country.

Lotuses of the Mahayana.

By Kenneth Saunders. Published by Mr. John Murray. Price 2*sh.* 6*d.* net.

"This is a welcome addition to the "*Wisdom of the East*" Series, a series already well-known for the excellent little books that it includes. Mr. Saunders is a sympathetic student of Buddhism and his present anthology bears eloquent testimony both to his scholarship and to his innate love of things philosophical. The suggestive introduction prepares the reader to the splendid selection the author lays before him. "The flowers of the lotus" here presented are arranged under three heads: (1) Seeds of the Mahayana in the Pali Canon, (2) The Essence of the Upanishads: The Soil on which they fell; and (3) The Essence of the Mahayana. For the contemplative mind nothing better than this little gem of a book can be recommended. It is full of sayings likely to create "divine discontent" in one. The author deserves to be congratulated on the discrimination he has exercised in making up his anthology. We have no doubt it will make its way through—both in the East and in the West.

The World's Living Religions.

By R. E. Hume, Ph.D. Published by Charles Scribner's Sons, New York. Price $1.75.

This is a volume in the well-planned and well-executed "Life and Religion Series" edited by Frank K. Saunders and Henry A. Sherman. Dr. Hume is well-known in India both as Professor and as the author of "The Thirteen Principal Upanishads". His present work ought to add to his reputation as a scholar and as a student of comparative religions. Dr. Hume has set himself to work in the spirit laid down by St. Paul: "Prove all things and hold fast to that which is true." That, in our opinion, is the right spirit to approach religions foreign to one. Dr. Hume's studies of the eleven religions of the world are done in the true historical spirit. A new spirit is working in Christian life and thought in India for some time now and this book bears witness to it. The detached and dispassionate treatment accorded to each religion in this book is worthy of notice. Dr. Hume deserves high praise for the very readable volume he has produced. We have no doubt that it will go through many editions, for it deals succinctly with a vital subject of universal interest.

Home Craft and Mother Craft in India.

By Constance E. Parsons. Published by the C.L.S. for India, Madras. Price 12 as.

A more useful book for mothers and house-keepers than this cannot be recommended. It is practical and well-written in simple, straight language. It is full of useful information, which every woman daily requires in conducting a household. The get-up for the book leaves little to be desired. A marvel of cheapness too, for it is priced only at annas twelve per copy. As a text-book for students reading English in Middle Schools it ought to prove highly useful.

Acknowledgments.

The Canada Year Book, 1922—23 and 1924.

Report on the Administration of the Holkar State, for 1924.

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Detailed Contents.

	PAGE
THE ECONOMIC CONDITION OF INDIA— *By Christopher Hay, M.A.*	.. 41
ECONOMIC POLICY OF THE FUTURE— *By Prof. C J. Hamilton, M.A.*	.. 42
MARRIAGE CUSTOMS AND THEIR SOCIO-ECONOMIC SIGNIFICANCE— *By G. Satyanarayana Murti, M.A., Professor of Economics, Madura College, Madura*	.. 50
PROHIBITION IN INDIA— *By Dewan Bahadur M. Ramachandra Rao, B.A., B.L., M.L.A.*	.. 53
RURAL DEVELOPMENTS— *By Sir Reginald H. Craddock, G.C.I.E., K.C.S.I.*	.. 57
THE RURAL PROBLEM— *By Mr. H. Conert*	.. 59
AGRICULTURE AND SCIENCE— *By Albert Howard, Director, Institute of Plant Industry, Indore*	.. 60
POVERTY PROBLEMS: AN EDUCATIONAL COLONY— *By Capt. Petavel*	.. 65
IDEA OF A TAMIL UNIVERSITY— *By the Hon'ble Sir T. N. Sivagnanam Pillai*	.. 66
SANDALWOOD OIL INDUSTRY OF INDIA— *By The United States Trade Commissioner in India*	.. 69
CONTROL OF CREDIT-PRICES AND UNEMPLOYMENT— *By A. S. Venkataraman, B.A.*	.. 70
THE CO-OPERATIVE MOVEMENT	.. 72
MIDDLE CLASS UNEMPLOYMENT	.. 73
ECONOMICS IN THE WEST	.. 75
CANADIAN TRADE AND FINANCE	.. 79
TOPICS IN THE JOURNALS	.. 83
MYSORE ECONOMIC CONFERENCE	.. 85
PUNJAB BOARD OF ECONOMIC INQUIRY	87
BOOKS IN BRIEF—	
Factory Legislation in India	.. 88
Indian Currency	.. 88
The Mathematical Groundwork of Economics	.. 88
OTHER NOTES—	
A Tree-Planting Machine	.. 49

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The Economic Condition of India.

By Christopher Hay, M.A.

"In agriculture, by far our greatest industry, progress cannot be achieved until the peasants are enlightened and begin to realize the benefits of systematic production, mutual self-help and scientific cultivation," said Sir Rajendra Nath Mookerjee in the course of his speech at the annual general meeting of the Asiatic Society of Bengal, of which he is the retiring President.



Sir R. N. Mookerjee.

Sir Rajendra Nath Mookerjee, in the course of his speech, dwelt at length on the economic problems of India, which were agitating the public mind at the present moment.

In reviewing these problems, Sir Rajendra Nath referred to the speech made by H. E. the Viceroy in opening the winter session of the Legislative Assembly at Delhi and said that His Excellency's references to the need for agricultural improvement deserved close attention and he had no doubt that the announcement of a Royal Commission to examine and report on the present conditions of agriculture and rural economy would be universally welcomed.

In the course of his address, Sir Rajendra Nath discussed the remedies for the present economic problem. He said :—

"I feel rather diffident to express any definite views upon the remedies to be adopted for the distressing conditions of the masses of India. A few points stand out prominently and to my mind these indicate the general lines along which reforms may, with advantage, be initiated. Education is, I believe, the crux of all the problems of India. What has struck me most forcibly is the progressive impoverishment of our rural areas and a gradual increase in the cost of living.

I have already commented upon the material and the psychological make-up of the rural classes. Poverty and destitution have overtaken them in their struggle for bare sustenance and ignorance, from want of education, prevents them from struggling out of their present deplorable plight. To remove this ignorance, to bring light and understanding to each one of the homes in the villages, to teach them the folly of imprudence and inform them of the viciousness of the money-lender's grip—these are the immediate objects which should engage the attention of our administrators.

Universal primary education of the right type for the masses is the chief desideratum to-day in India. Any education that is to attract the mass of the people must have a direct and evident bearing upon the activities of their adult life.

Agriculture is the fundamental, if not the most important, industry of any people. In agriculture, by far our greatest industry, progress cannot be achieved until the peasants are enlightened and begin to realize the benefits of systematic production, mutual self-help and scientific cultivation. They will not do so unless we spread throughout the length and breadth of the country the desire for education and provide ample facilities for meeting it.

Knowledge will cleanse the ryot of his pernicious habits. It will clear his befogged mind of evil superstitions. He will then be able to think for himself and his future. He will be able to understand and to take full advantage of the co-operative societies and thus avoid resorting to the money-lenders.

I may here sound a note of warning in regard to

the measures adopted by the Government for the spread of co-operative methods. The key to success of the co-operative movement lies in creating in the people themselves a desire to render mutual help, to adopt the habit of team-work, and to appreciate the benefits of joint labour. It should be a movement from below if it is to rest upon secure foundations. In India from the very nature of the rural problem it is possibly difficult to stimulate the rural mind and the movement has to originate from above. But in actual administration the true principles of co-operation should not be lost sight of. A registrar of co-operative societies should be a guide and a friend of the cultivators and not a haughty bureaucrat installed in a lofty position, isolated and out of touch with the feelings of the villages. I feel that considerable improvement could be made in the present administration of this department.

The Government of India is possibly the greatest Socialist State in the world in the healthier sense of the term. For the most part the State owns the land and draws its revenue in the form of land tax and water tax direct from the cultivator; performing the functions of a landlord the State will, at times of famine or scarcity, remit these taxes or make advances for the coming season. The State constructs, owns and operates vast systems of railways and irrigation canals with the allied concerns such as collieries and workshops comparable in size with any in the country. The forests of India are owned and worked by the State. All this denotes a vast corporation with multifarious duties of construction and operation and of buying and selling.

The State's business operations are often in direct conflict with private enterprise while the resources and technical skill at its call are much greater. It is not unnatural, therefore, that all classes have come to look to the Government for a lead. The ryots, when in trouble, expect the Government's paternal help and the industrialist looks on Government to shoulder the risk in any new industrial adventure.

To such an extent has State enterprise grown that many thoughtful persons see in it a danger to the nation, a danger of killing private enterprise and adventure, of sapping individuality and character.

The State as such and in its proper function can render invaluable aid to the industrialist. While recognizing that self-help and self-reliance is the primary virtue needed for human progress, the Government can not only view the desire for economic betterment sympathetically but can take active steps to establish a policy which will allow this desire to fructify and thus materially assist in improving the general conditions.

Economic surveys, education, co-operative system, industrial stimulus, agricultural research, demonstration and propaganda, and a host of similar activities fall within the ambit of State services, but these activities should stop short of entering into direct competition with or displacing private enterprise. Our Government is becoming alert and wide-awake and I fully hope that with the hearty co-operation of the people the Government can and will achieve a measure of success which will hasten the progress towards the economic ideal."

The stress that is laid on a differentiation of duties of the State and the *entrepreneur* is, we think, a just one. While Government should pioneer in new industries, it should scrupulously avoid competition with private enterprise. It can educate, but not compete. If that is the policy that is required by Sir Rajendra Nath, we entirely agree with him.

Economic Policy of the Future.

By Prof. C. J. Hamilton, M.A. *

It is a commonplace of every-day observation that one of the chief consequences of the Great War of 1914–18 has been a series of changes and disturbances in the economic life of well nigh every country of the world that has partially paralyzed the normal production and distribution of wealth and shaken to their foundations the economic institutions of society. That war on such a scale must be accompanied by a violent interruption of peace-time activity and is inseparable from immense economic loss is self-evident. The supply of commodities for normal consumption is largely exchanged for the production of munitions. The ordinary channels of trade in a world that is organized as a co-operative and mutually dependent whole are in great measure destroyed. The world itself is split up into warring sections deprived of the immense benefits of international exchange and thrown back upon their own resources. Millions of men, who are usually occupied in the production of material wealth, become unproductive consumers or active agents of destruction. But the return from the convulsion of war to the healthy functioning of a society at peace is attended by even greater difficulties than those directly evoked by the conflict itself. For not only is there the general breakdown in the mechanism of production and exchange but there is ingendered a host of rival and incompatible interests without the spirit of sacrifice and the singleness of purpose that is required to resolve them. Thus since the Peace of Versailles we have been passing through a period of economic disorder and uncertainty, the outcome of which we cannot yet foresee. For it must be clearly understood that the difficulties of economic reconstruction are not inherent in the task of rebuilding the

* Part of Presidential Address delivered before the Indian Economic Conference held at Madras in January 1926.

mechanism of production and exchange. These would disappear as a mist before the morning sun if only there prevailed a will to co-operate and agreement upon a plan of action. The difficulty is in the world of ideas, not of things.

I do not propose in the course of this address to attempt to discuss the particular economic difficulties from which nearly all countries are, in some degree, suffering or have suffered in the immediate past, such as the breakdown of currencies, the agricultural and industrial depressions with their counterpart in the prevalence of unemployment and in conflicts between capital and labour, the failure to balance public income and expenditure, and the obstacles to the adjustment of international debts. I want rather to direct your attention to the future and to ask two questions: "Towards what form of economic society are we tending?", and "towards what form of economic society should we strive?"

On these two great issues I will venture to offer you a few reflections and tentative suggestions.

"Irrational" Principle of Nationalism.

In the first place and by way of preface may I lay stress on the great need that now exists for making the attempt to review our economic life, the economic structures through which it functions, and the psychological forces from which these functions received their motive power from the standpoint of the broad welfare of mankind rather than in relation to the self-interest of particular groups or even of entire states. The late Lord Milner in his Credo remarked that the great dividing line of thought and of parties in the future would be between those who took up the Nationalist and the Cosmopolitan standpoints respectively. I cannot help feeling that Lord Milner was wrong in pledging himself to the former. In my view there are few injuries wrought by the Great War that are comparable to that inflicted by the intensification of the spirit of nationalism which it caused. While there are, of course, aspects of nationalism that are healthy and desirable, its elevation to the place of a dominant principle is, I believe, almost wholly irrational and evil.

Also by way of preface, I would raise a fundamental issue that must bear immediately upon any attempt to answer the two questions that I have propounded. I refer to a narrow form of economic determinism, that if correct, would remove any discussion of future economic policy into the realm of purely academic debate. It is sometimes believed that the evolution of economic institutions and economic policy is the result of the striving of innumerable individuals each dominated by habits and conceptions based upon immediate self-interest. The external circumstances being given and individuals being governed in their conduct by their primary appetites and wants, self-interest is inevitable and, save for short periods and in minor degree, is incapable of being modified by the policies of statesmen or the theories of social philosophers. There is, I think, a considerable measure of truth in this theory, but it is far from being the whole truth. It is evident, for example, that the direction of self-interested conduct is greatly affected by the provision of law. But law is for the most part neither initiated nor enforced by the general body of persons comprising a state. This is very largely the work of small groups of persons who by reason of their organization exercise a power out of all proportion to their numbers. The law in turn creates a body of self-interest which tends to perpetuate it. It is true that to some extent everywhere, and especially in democratic states, the law ultimately rests upon popular sanction. But this sanction is expressed through the medium of ideas. Where the questions at issue are difficult no clear ideas may exist. It appears, therefore, that the course of social evolution is largely determined by the action of comparatively small but organized groups and these groups are far more amenable to the individual influence of statesmen or philosophers than are the opinions of the masses. It is also mistaken to suppose that self-interest necessarily implies one inevitable course of conduct. The satisfaction of human wants itself depends upon the nature of wants and these are in no small degree based, not only upon purely physical needs, but upon considerations of popular esteem. Popular estimation itself is largely relative to the forms of society and to current religious belief. Thus in these and in other ways economic development would seem to be possible upon a number of alternative lines and the choice between them will be, to a great extent, determined by the ideas which achieve supremacy in the minds of those influencing group action. More than ever, therefore, as the popular control over group action extends it is important to implant true ideas regarding the economic and political organization which profoundly affect human welfare.

Inspired by the belief that our efforts to

arrive at correct judgments as to the right economic policy for the future are of the utmost practical importance, we must begin with a reference to conditions as they are.

What are the essential reasons for the present economic difficulties with which the world is beset, and, more important, what is the origin and the force of the current ideas and opinions which will shape the future economic structure of society? Is the present merely a violent but purely temporary disturbance which will presently give way to an era of progressive prosperity under an individualist regime of capitalism and private enterprise substantially similar to that which was being worked out in the 19th century? Or is it the beginning of a new economic era in which the whole character of things will be changed?

Present Economic Difficulties.

There are many who regard the economic world of to-day, with its upheavals and impaired functioning, the spread of unrest and the criticism of existing institutions, as merely the result of the breakdown due to the Great War. They look forward to the gradual repair of this breakdown and to a return to a pre-war society developing in harmony with the principles then prevailing. In support of this view they often point to the analogy between the present day and the period which followed upon the economic and political upheavals of the Napoleonic Wars. Then, as now, at least in Europe there was violent disturbance to the normal productive organization, both in industry and agriculture, accentuated by the rapid changes due to the new inventions. Then, as now, large sections of the people were impoverished and the State seeking to mitigate their condition, invaded the economic sphere with schemes for the regulation of prices and wages and distributed relief in a manner that at once imposed a heavy burden on the public exchequer and largely undermined the habits of industry and self-help of the labouring classes. Then, as now, trade and industry were hampered by great changes in money values and effects of currency inflation. Then, as now, there was far-reaching popular discontent leading to attacks upon the economic and political organization of society, the denunciation of capitalism and the institution of private property, and the demand for economic equality. From this point of view the chief difference between the early 19th and the early 20th centuries is that while formerly the economic breakdown was far less severe and affected a world that was much less highly organized and interdependent, it is now much more intense and touches in varying degree almost every country of the world.

Effect of Individual Economic Freedom.

From the disastrous beginning of the 19th century there followed an era of rapid and scarcely interrupted economic progress such as had never occurred before in the history of the world. And as England had been prominently the centre of economic disturbances so was she the country in which the new industrial method and the new economic policy were primarily applied and worked out. Not unnaturally she became the example which other countries sought to follow. The key-note of the method was increasing specialization of function under the stimulus of unfettered competition and private enterprise. The key-note of the policy, applied with but few exceptions, was the abstention of the State from direct participation in or interference with the production and distribution of wealth. A policy of State regulation of prices and wages came to be thought of as manifestly foolish, if not impossible of achievement. The attempt to control or benefit producers or consumers through the operations of tariff were generally condemned on the ground that it militated against the most efficient disposition of economic resources. Economy in public expenditure and a simple tax system, so devised as to interfere as little as possible with productive effort, were the leading maxims of public finance. Individual bargaining and freedom of contract were held to be the best guarantees for an equitable distribution of wealth. The responsibility of the State for the provision of employment or the maintenance of the standard of comfort was rejected and the poor law was reformed in accordance with principles that became the model for the rest of Europe. The adoption of the gold standard and an automatic currency system, together with strict precautions against an inflated note issue, were thought to have realized the final embodiment of sound monetary policy. Such were the cardinal elements of English economic policy and practice during the 19th century and in the main they were accepted and applied by the leading countries of the world. Under this regime of individual economic freedom the wealth of nations advanced at a rapid rate, population increased, and the standard of living improved so greatly that there was little comparison between the condition of the people of progressive states at the beginning and the end of the century. Is it not probable that if

the same policy were again put into general practice to-day we should find that our present economic evils would be rapidly assuaged, that once more we should resume the march of progress advancing to yet higher levels of material prosperity with the aid of our increasing command over nature and the improved efficiency of the people resulting from education and the advancing knowledge of the laws of health?

I have no hesitation for my own part in giving an affirmative answer to this question.

Comparison with Previous Century.

I have referred to the opinion of those who see a close analogy between the breakdown of economic organization and the social and economic discontent which prevailed in Europe after the Napoleonic wars and the much more serious breakdown and equally deep-seated discontent that now prevails. If the circumstances of the two periods are sufficiently alike it is not improbable that we shall witness a gradual restoration of the economic institutions and principles that enabled the people of the last century to advance in numbers and material prosperity. No one naturally will expect that the course of development in the 20th century will follow in close imitation of that of the 19th. The question is merely whether it will proceed on the same broad principles and maintain the same leading economic methods and institutions.

This question prompts us to ask whether the analogy between the economic breakdown of the 19th century and of the 20th is really as close as some suppose. There are three differences in the circumstances of the two periods that are of great significance:—

(*a*) The first is the growth of democratic government.

(*b*) The second is the increase in relative importance of the industrial and town population.

(*c*) The third is the rapidly decaying influence of religion.

If we examine the probable consequences of these changes it will be found that they are likely to have a profoundly modifying effect on the economic development of society. During the greater part of the 19th century political power was, even in countries such as England, largely concentrated in the hands of landed proprietors and the owners of industrial capital. Elsewhere the bonds of feudalism still retained their hold and feudal conceptions dominated social and economic relationships. Naturally law and government were devoted to the maintenance of the rights and privileges of the propertied classes. The growth of economic freedom served to individualize property and to make it more mobile, but at the same time it further established private property as the most sacred institution of society. Nevertheless the seeds were already sown that were to bear fruit in the extension of democratic powers. As wealth increased and became more widely distributed, as men were gathered into factories and towns making it easier for them to organize and exert political influence, the franchise was gradually extended in order to enlist on the side of established society these in the ranks of the small property owners. With the extension of the franchise came the demand for popular education and this in turn brought about further enfranchisement. Thus was set at work a subtle yet powerful influence—that of competitive statesmarship. For once the position and influence of statesmen is made to depend on a popular vote. There is an irresistible tendency to initiate measures that will win popular support and also to increase the number of potential supporters by further extension of the franchise. So rapidly has this process advanced that to-day adult suffrage and political equality exist in a large number of the most powerful States. What significance has this fact in relation to future economic policy?

The answer to this question is to this extent clear. If democracy lasts, the will of effective majority will determine the policy. In what direction is this likely to work?

Socialistic Ideals Explained.

There is a large and increasing number of persons who believe that the demand for a substantial equality in the distribution of wealth cannot but be effective before very long. Marxian Socialists, seeing in capitalist society an inevitable division of interest between the few rich and the army of proletariats, looked to revolution as the method of securing economic equality. The Syndicalists substituted Trade Union organization, sabotage and the general strike. But the majority of modern Socialists look to nothing more formidable than the extended franchise and the use of the ballot box.

All, however, agree that the Capitalist system is incompatible with economic equality and all believe that substantial equality of wealth is demanded by the will of the people. I may quote two modern social philosophers who agree that the disparity between the political and economic foundations of modern society is increasing and must be the cause of

radical changes in the economic system. Professor Laski in his "Grammar of Politics" writes :—

"Political sovereignty is distributed among the mass of citizens, most of whom are poor; economic power is concentrated in the hands of a comparatively small section of the people. Such a situation is dangerously unstable".... "Society is drifting towards a moment when the inconsistencies of our political and economic system may be very bleakly exposed."

Professor Miller Lyer in his "History of Social Development" remarks :—

"Only production has been organized, not remuneration; the system of distribution of profits has remained the same as in the days of individual production and prevails now as an absurdity."

Land and Economic Equality.

Granting for the moment the demand for economic equality, is it true, as Socialists generally argue, that a sufficient equality cannot be secured under a regime of private economic enterprise. Economic inequality arises chiefly from three causes : the inheritance of private property, differences of opportunity and differences of ability. Consider for a moment inequality in property. Is it irreparable except in moderate degrees for an efficient functioning of private economic enterprise ? The two cases of property in land and property in trade and industry must be considered separately. In the case of land there is no question of the effect of inheritance on the quality of land. It is mainly a matter of management. It is, moreover, well-known that unless the law of equal inheritance prevails, especially when accompanied by checks upon the free transferability, the ownership of land is very widely distributed among peasant proprietors, who do not differ very greatly in degrees of wealth. Peasant proprietorship, however, is apt to be accompanied by grave economic defects. It is often unprogressive, the land is starved of capital, it tends towards excessive fragmentation, it lacks the accompaniment of efficient marketing organization, it may be accompanied by the presence of a considerable landless class of agricultural labourers living at a very low standard.

It is with the intention of remedying these defects that the Liberal land policy has been worked out in England. Its primary objects are to destroy agricultural land ownership and replace it by a system of cultivating tenns, with important restrictions in the way of land transfer. It is accompanied by proposals to stimulate co-operation among agriculturists, thus supplying the necessary capital and organization for efficient working. The scheme deserves very careful examination. The chief interest lies in the provision of a method for getting rid of larger landed properties and of transferring economic rent to the public exchequer. At the same time it leaves the cultivation of land in the hands of private enterprise.

Distribution of Industrial Property.

The disparities in wealth that most attract the attention at the present time are not, however, due to the rent of land, but to the profits of industrial and commercial capital. Capitalism, it is said, is at the present time resulting in the concentration of wealth in the hands of the few to an extent hitherto unknown. Yet we are told that in the country where freedom of economic enterprise and the role of capitalism has fullest play, the process of democratization of capital is most rapidly advancing. "The great revolution that is taking place in the United States," says Professor Carver, "is the democratization of property. This is destroying the validity of the old economic classification of the people into 'labour' and 'capital'. Professor Carver is a confirmed believer in economic individualism and thinks that the democratization of property will remove the popular discontent with capitalism. Professor Ripley is not so confident in the result. He agrees that one of the marked features of recent capitalism is the wide distribution of small stock-holders. But, he does not find in this a proof of the real democratization of industry. For he holds that control is more and more being divorced from ownership and concentrated in the hands of a few big holders in the shape of financial houses which promote and deal in the stock. There is no doubt, however, that through the method of labour co-partnership, by the larger facilities for dealing in stock in small denominations, and by a steeply graduated system of death duties that industrial property would be much more evenly distributed and the accumulation of large fortunes powerfully checked. Labour co-partnership has always been strongly opposed by the Trade Unions, but if the habit of industrial investment should spread among the wage-earning classes it might cause a reversal of this policy and remove Trade Unionism some of its worst influences in other directions.

Professor Ripley, in the opin[illegible] I have

quoted, raises another distinct issue bearing upon the future of private capitalism.

It has always been argued by Socialists that capitalism not only gives an unequal and unfair share of wealth to the wage-earner but that it constitutes him a wage-slave. (?) Much of the prevailing discontent with the industrial system is traced to the unsatisfactory status of the industrial worker. He possesses no share in management, no sense of self-determination, but is conscious of an inferior status. No escape, it is said, is possible until the workers own the means of production.

Socialist Remedies Examined.

In my opinion, while the evil is very largely a real one, the proposed remedy so far from providing a means of escape would in fact exaggerate the evil. The difficulty does not primarily arise from the private ownership of industrial capital but from the superior efficiency of the factory system and large-scale production, the success of which demands individual control. Socialism cannot afford to dispense with large-scale enterprise. But to substitute State control of the collectivist kind for private enterprise would be the pass from relative individual freedom to comparative tyranny. It is the recognition of this fact that has led the most thoughtful modern Socialists to repudiate Collectivism and advocate Guild Socialism and Syndicalism. On the other hand what might thus be gained in the shape of greater self-determination would be more than lost in difficulties and inefficiency of management. Capitalist industry is moving by many experiments towards the realization of the co-operation of the wage-earners in management, while the sense of inferior status will be removed not by the public ownership of the means of production but the advance of education and the spirit of self-reliance among the workers.

If I were asked to point to the characteristic difference in the sphere of economic thought between the 19th century and the present day, I should unhesitatingly say that it consisted in the prevailingly want of economic faith in contrast with the confirmed belief in individualism and free competition that then held the field. Even though comparatively few thinking people are convinced Socialists there are a large number who feel profoundly dissatisfied with the existing economic system, who assert that capitalism has broken down and look for very far-reaching changes of some kind without quite knowing in what direction change should take place.

To a large extent this temper is the outcome of temporary disturbances arising from the War and may be expected to disappear when readjustment to normal peace conditions returns. This, however, is by no means the sole explanation. The critical attitude towards capitalism was certainly gaining force before the war. The belief was growing that if private enterprise and economic freedom were to be preserved the evils by which it was attended must be removed. Two of the three evils I have already touched upon: the extreme inequality of wealth and the lack of a satisfactory status, a sense of self-determination, felt by the mass of the wage-earners. I have argued that a far greater measure of equality is attainable without sacrificing individual economic freedom and that it is a grave delusion to suppose that Socialism of a collective type would bring a greater measure of self-determination.

There is, however, a third evil which probably weighs even more heavily in the balance against the capitalist system. I mean the evil of economic insecurity. Economic insecurity is no new thing. From the beginnings of history men have suffered from famines and scarcity. But insecurity of this kind seemed to be the result of natural forces and men believed that it was God who had to be propitiated and not the economic system that had to be attacked. But the insecurity of income arising from industrial change, from variations in the forces of demand and supply appeared to be due to defects of human organization and could be shown to be largely the attributes of an individualist competitive regime. Moreover, the brunt of the suffering that arose from industrial change or from crises and depressions, fell upon those with the smallest capacity to bear it. Socialism has always owed much of its influence to the belief that it would give a larger measure of economic security to the individual and particularly to the labouring classes, and enable a more effective industrial organization of production that would eliminate the danger of unemployment. I believe that unemployment could be thus avoided and economic risk transferred from the individual to a large extent. But I also feel confident that this result could only be reached by substituting despotic economic control in such a form as would mean an entirely disproportionate sacrifice of individual liberty.

Concluding Remarks.

At the close of the Conference, Professor Hamilton said as follows:—

"May I, before this session breaks up, ask your indulgence to say a few words in the nature of concluding remarks? We must all be happy at the knowledge that our Association is growing. If it is not perhaps growing by leaps and bounds, it is at least growing with health and strength, both in quantity, and, I venture to believe, in quality. I cannot of course but feel special rejoicing at that fact, because I believe very strongly that an association of this sort can serve the country in a very great degree by promoting friendly impartial investigations and discussions of economic problems, and in helping to form the economic opinion of the country; and also because by bringing together people from different parts of India, it is a valuable aid to our knowledge not only of the facts of life prevailing in different parts of the realm, but of the ideas which do tend to differ between different parts of the country. That is one reason why I feel glad that this association is growing. I feel glad for a personal reason that, whatever else I have done in this country, I think I can claim the small personal pride in having started the association.

Let me now pass to make a few remarks on two main subjects with which we have been concerned in this Conference; firstly, the methods for the development of agriculture and in the improvement of the position of our agricultural classes; and secondly, the question of the role to be played by foreign capital in the development of India.

AGRICULTURAL IMPROVEMENTS.

As I stated yesterday when one comes to survey the difficulties that are before us in the direction of agricultural improvement and development, one is apt to feel appalled because you are at once confronted with a perfect network of inter-related problems and difficulties, so that you seem to be moving in a hopeless sea of vicious circles. And yet one knows perfectly well that it is true of all economic problems as of all human problems that progress does take place and we do gradually emerge from one stage into another even though we cannot at no moment put our finger on a particular device or a particular reform which shall emancipate us at a wish or at a blow.

We are very likely to have in the near future a somewhat comprehensive enquiry into the agricultural policy and economic life of the country so as to endeavour to develop a forward active progress of agricultural reform. What are the points which such a body of enquirers should concentrate upon in the main! As I suggested yesterday, I feel that the difficulties in the way of agriculture proceed from two main sources. It is first of all a question of the kind of life which the people of India wish to lead. There was, I think, a profound significance in the remark made by Prof. Khaji, and that, after all, was received by more applause than any other remark made this morning—that Indian people would rather have India undeveloped than have India exploited. That is only one aspect of the whole range of ideas and conceptions which must dominate the economic development of India and of the question as to what kind of life is ultimately preferable to Indians. For it is perfectly useless to talk about methods, for, we will say, development of agriculture along western lines, for making it more business-like and capitalistic, without having some notion as to the nature of the goal at which the people of this country wish to arrive.

Then, I think, there are two dominant needs. One is capital and the other is profit. After all what I feel is that when one listens to speeches about agricultural reform one hears a great deal about the desirability of returning to the old co-operative Indian village, or about the desirability of getting rid of the money-lender, and about the desirablity of restoring in some way the prosperity to the village. But the viral defect of all these pleas seems to me is that no practical suggestion is made as to the driving force which is to bring these changes about. Changes do not occur in our economic or social development unless there is an effective force tending to bring them about. Vague aspirations are perfectly useless. You must find some vital social influence to start the work and keep it going. Speaking of economic life in a very restricted way, the most dominant force is profit. How are we to make it more profitable, to cultivate more effectively, to draw brains into agriculture which at present it is largely lacking, and to substitute efficient methods in the place of existing inefficiency? It is not necessary for me to enter into details.

But one thought I wish to emphasize. It is this that we have got to try and think out the matter in the light of the chief idea that it is useless to consider what might be desirable in the abstract and to be merely hopeful. We must try and like an engineer who has to construct an engine, have got to see whence the power is going to come from and where it is to be applied. And then we shall say we return to the co-operative village. To say so

under the present conditions would be unscientific. I think we should be more scientific in our sociological think.

QUESTION OF CAPITAL.

Let us now turn to the question of capital. Again I say to my mind the dominant problem is the sort of life you want to lead. And may I say at once that I cannot agree with those gentlemen who refuse to admit the force of the distinction between the economic and political aspects of the matter. Whatever is said and done, the fact remains that the economic need relative to this problem of capital is a distinct need from political need. I can most fully appreciate the feelings of those people who say somewhat in this way: "We want our country to be richer; we want industrial development and agricultural improvement. We recognize the role capital must play. But if a vast amount of foreign capital is invested in this country, then there is the powerful practical reason to expect those countries, from which that capital has come, will claim a right to interfere with us in a way in which they would not otherwise do." That, I think, is a very important aspect of the matter; and it is primarily a political matter though it has economic reactions.

At the same time I am bound to say that if I, not as a European or Englishman but as merely a thinking machine, tried to balance the relative advantages and dangers which arise from the use or refusal of capital, then I cannot help feeling that the gains from an extended use of capital through the economic improvement of India are likely to be so much greater than any probably political dangers which might arise from the employment of foreign capital. Though I appreciate the dangers from political point of view, yet I feel that they are probably exaggerated that after all we can never foresee very far from what direction political danger might arise and that if we try to take precaution against political danger in one direction, we might find we have been dropping the bone and catching the shadow."

Finally, I will say this that there is no power which is likely to contribute so much to Indian political emancipation and political independence, as a large access of economic resources. Do we not feel to-day that one of the greatest engines of political power is economic power. I believe that India economically advanced and free would be far more politically able to resist any undesirable interference from without, than India impoverished. Even if she were able to say, "We have not employed any foreign capital", that cannot be made a ground for freedom from interference because India poor and India undeveloped will be unable, I think, in the long run, to resist interference. And there will be plenty of potential causes for interference on the part of other nations, if India is not able to say on the strength of her power from within: "no, we shall not be interfered with; if you interfere, we shall resist you".

One or two words more. While I was listening to the speeches as to the advantages and disadvantages of keeping out foreign capital, I cannot help feeling that you want to have your cake and eat it too

A Tree-Planting Machine.

The U. S. Forest Service has recently been in communication with T. A. Hoverstad, Development Agent of the Chicago Great Western Railroad Company, Chicago, Ill. Mr. Hoverstad directed forest planting along the Soo Railroad in North Dakota, in 1915, 1916 and 1917, and at that time he developed and used a tree planter. The following is quoted from his letter:—

"It is my opinion that on all lands that can be plowed, it is practical to use a tree-planting machine. Our first experience with the tree-planter was in 1916. We planted quite a number of trees for live snow fences on the Soo Railroad. The previous year we planted trees by hand. A tree-planting machine is an inexpensive affair. I should be glad to help design such a tree-planter without cost to you. It could be used co-operatively. One machine could be had in each county or in each township, depending on how much tree planting would be done, and the planting could be done under the direction of the county agent. If this were done, a very large number of trees would be planted by people who, as a rule, do not like to spend very much time setting out trees by hand."

Mr. Hoverstad's machine apparently resembles some machines in use to-day for planting agricultural crops. These machines are equipped with a plow which opens up a furrow, and one or more men sit on the machine and stick the plants in the furrow as it is opened. Two wheels set on angles pull the soil in around the roots of the plants.

Marriage Customs and Their Socio-Economic Significance.

By G. Satyanarayana Murti, M.A.,
Professor of Economics, Madura College, Madura.

I propose to give here a short sketch of some of the peculiar amongst the marriage customs of our land and their socio-economic significance with a view that it engages the earnest attention of both the schools of social reform and revival. Eminent lawyers are of opinion that the Hindu Law of Marriage in its various aspects was originally intended for the Aryans of the Aryavartha and not for South India. Only in later times some of the marriage observances sanctioned by the Smrithis were adopted in the South. As borne out by the Census reports and Thurston's "Castes and Tribes of South India", most of the Hindu tribes of the Madras Presidency observe marriage customs widely differing from those of the Aryavartha. Several ethnological and historical causes, the rise of various schools of Hindu Law consequent on different interpretations being put on the same texts of our Sacred Law and above all the influence of custom which in most cases has over-ridden the authority even of our Smrithis, are responsible for many of the peculiar and often objectionable marriage customs in the different parts of our country.

The decennial census reports and reports of the several ethnographic surveys disclose a mass of details about the numerous local customs regarding marriage. A close analysis of the available information establishes the following facts, however offensive some of them might be to the zealous reformers and revivalists. No generalization is possible about the marriage laws and customs: the Shastric conception of marriage is practically dead. "Hindu Law permits polygamy and custom sanctions polyandry as it was at one time common amongst the Nairs and is still a veiled custom amongst them while it is openly practised by the low caste people in South India." (*Gour.*) Widow marriage is inconsistent with the Hindu theory of sacrament but the prohibition by Manusmrithi is confined only to the twice-born castes and even amongst them widow remarriages are becoming more common owing to the activities of the reformers and widows' homes and above all the Act XV of 1856 removing all legal obstacles to the marriage of Hindu widows. Marriage is generally by purchase—the custom of Varasulkam involves payment for the husband and that of Kanyasulkam payment for the wife. Infant marriages are both customary and common, the average age for marriage being 8 to 12 years with all sorts of provincial variations, but there is a tendency in reformed circles towards post-puberty marriages. Inter-caste marriages though once permitted within certain limits have long since fallen into desuetude but they are, however, freely performed in the Punjab where there is a great dearth of females and the bonds of custom do not seem to be tight; some Indians to-day want the legislature to legalize inter-caste marriages, remove all legal disabilities consequent upon the present situation of Hindu Law of Marriage and make it practically a contract as in the Western countries: but inter-sub-caste marriages are everywhere legal (supported by Privy Council decisions) though not equally popular in all castes and sub-castes.

With regard to the prohibited degrees of marriage according to the ancient Hindu Law the texts of Manu, Vasishta, Vishnu, Yajnavalkya, Narada, etc., are all conflicting, many of them too wide and none of general application. The net result of the Shastric rules as to the prohibited degree of relationship for marriage (the objections to marriages between Sapindas, Sagotras, Samanapravaras, etc.) is to render ineligible no less than 2100 relations as against the relations with whom marriage is prohibited amongst the Christian nations in general or the English rules of prohibited marriage degrees as given in a statute of the times of Henry VIII. The customary law of marriage applicable to dwijas reduces within very narrow limits the prohibition of intermarriage between collaterals. The relations prohibited to be taken in marriage by a man are his sister, father's sisters, mother's sister, brother's daughter, mother's sister's daughter and father's brother's daughter. Writing on this subject of Hindu marriage, Cunningham remarks, "the marriage of a man with his sister's daughter or mother's brother's daughter or father's sister's daughter is usual in all classes even among Brahmins." But among

the AndhraBrahmins I know a man is prohibited by custom from marrying his father's sister's daughter. Amongst both the Tamil and the Telugu Brahmins custom sanctions the marriage of a man with his mother's brother's daughter. Baudhayana and Brihaspathi mention some examples of laxity in the law of prohibited degrees of marriage. Some current customs present worse examples. We even hear of the validity of the marriage of a man with the daughter of his wife's sister or the sister of his step-mother or a paternal uncle's wife's sister. This is analogically tantamount to a man marrying his own daughter or mother—nothing short of an incestuous marriage. History shows, however, the horrible absence of prohibition against incestuous marriages in ancient Law. Abraham had espoused his own daughter while in Egypt as in the case of Cleopatra and her younger brother, uterine brothers and sisters validly married; Ancient Athens and Rome had similar peculiar practices. Among the Kallans in our land, a man can marry the daughter of his father's sister or step-mother. Curiously enough marriage is permitted amongst the Maravers between the children of brothers. Amongst the Pallavans of Malabar, even brothers and sisters are said to marry. Amongst the Tottiyars, it is customary with women after marriage to cohabit with their husband's brothers and near relatives. The Kallars of the Madura District allow a woman to have simultaneously 10 or 8 husbands who are all held to be the fathers jointly and severally of any children that may be born of her. Peculiar Kaliyuga Draupathis indeed! Amongst the Garos, a man can marry his widowed mother-in-law. The polyandry generally practised in some parts of Northern India is of the fraternal type, all the brothers in a family having usually one joint wife but distant relations and even persons belonging to different families agree to share a wife in partnership. The husband visiting the wife has to leave his shoes or cap at the door which is notice to the other husbands that the wife is engaged (The Punjab Census, 1912, Part I). "Among the Vellalars of Karoor, there is a peculiar custom," says Nelson, "of fathers getting adult women as wives for their infant sons and themselves cohabiting with those women and begetting on their bodies children who are affiliated to their infant husbands." Singularly enough some Malabar marriage customs admit of promiscuous cohabitation and so parentage is not generally ascertainable in the male line and inheritance runs, therefore, in the female line. The origin of this practice of polyandry and of this rule of descent termed Marumakatayam or nepotism in the female line is attributed to Parasurama and the settlers of Malabar but the truth seems to be that it is a relic of primitive antiquity. In a system of promiscuous intercourse like that in Malabar, the ordinary state of widowhood is necessarily unknown. The law of Canara called the Aliya Santana law of marriage is similar to that in Malabar and the High Court of Madras held that those sections of the Indian Penal Code providing for the punishment of offences against marriage do not cover the cohabitation of the man and woman under the Aliya Santana.

Exigencies of space forbid any further enumeration of such peculiar marriage customs in our land. When in the name of custom which, they say, is "transcendental law" several abnormalities of the type noted above pass muster, may I be permitted to request the various leaders of society of our country in due regard to decency and modern canons of morality, if there are any, to organize effective movements for a thorough re-overhauling or total extinction of such shocking and horrible customs as still persist in this "sacred land" of ours? Both the schools of social reform and social revival in India have enough-and-to-spare of work if they even sincerely devote their whole attention towards a modification or eradication of some of the peculiarly shocking marriage customs and practices noted above.

I venture to suggest some socio-economic considerations which should actuate the minds of our social reformers and revivalists in effecting some sound changes in our marriage customs and observances. Shastric and superstitious arguments apart, those who advocate widow remarriage and inter-caste marriage amongst classes and castes into which these reforms have not yet widely penetrated should remember that economists already complain of (and statistics also bear unmistakeable testimony to) the growing pressure of population on the means of subsistence in our country which is still overwhelmingly agriculturist and poor. Universalization of widow and inter-caste marriages would tend to quicken the rate of increase of population which is not an unmixed economic blessing. It is a well-known doctrine associated with the name of Malthus that the fecundity of the human race is such that the people unless subject to certain

checks will multiply at a rapid rate with no equal pace in the rate of increase of means of subsistence. A foresight of the difficulties attending the rearing of a family acts as a preventive check far more in England and Wales than in our country where begetting sons after entering into the *vivaha-samskara* is a religious duty for most people. A very large proportion of the Indian population at the reproductive ages of life is married. Unmarried persons per 1000 of each sex, male and female, in England in 1911 between the ages of 15 to 20 years are 993 males and 988 females; and between the ages of 20 to 25 years, 857 males and 757 females. At 25 years of age more than three-fourths of the girls in England are still unmarried. In Madras, Bengal, etc., they are, roughly speaking, less than 2 per cent. The potential effect of this great disparity in the marriage rate on the relative growth of the population in England and India is obvious. We see, however, in our country a gradual rise in the age at marriage. According to the recent census of 1921, in the age group 10-15 years of girls, there were 459 per mille unmarried in 1921 as against 377 in 1911. There is a gradual marked tendency now to postpone marriage coupled with a similar tendency at the earlier productive ages. Pre-puberty intercourse and prolonged lactation have an important bearing on the actual fertility of women; the former reduces child-bearing capacity while the latter besides diminishing the conceptivity rate among women leads more or less to the practice of abstention from intercourse. Cohabitation at or soon after puberty tends to reduce population partly by lowering the fertility of women and partly by increasing the death rate of young wives. Again the study of the variation of the number of children per family in the Punjab according to the age of the wife at marriage admits "the conclusion that the marriages in which the woman is below 15 or above 30 are relatively infertile" (The Punjab Census Report, Vol. I, 1921). The Census Superintendent for Baroda remarked that large numbers of "child wives march from the nuptial bed to the funeral pile. Nervous debility, consumption and uterine diseases create havoc among them." The leaders of our society ever busy with programmes of social amelioration should remember that early marriages though they lead to higher conceptions of right conduct are injurious to the health and happiness of our young women and increase rather than diminish the tendency towards an excessive birth-rate. Statistics show that the birth-rate in England and Wales has fallen from 35·4 per thousand in 1880 to 25·4 per thousand in 1920; but in India except among small sections of the community statistics reveal no general tendency for the birth-rate to fall. That is why most professors of economics advocate that one effective remedy for poverty in India lies in birth-control and the Indians realizing their responsibility in the matter of addition to the species. Varnasramites and social reformers unless influenced by economic considerations of the sort urged above in their zeal for reform or revival do irreparable havoc to the country.

Whatever might be the Shastric vigour of the anti-widow-remarriage propaganda, it is an undisputed fact that a good deal of public opinion seems to be in favour of widow remarriage as borne out by 60% of Hindu widows of all castes and creeds marrying again and begetting children. From the statistics published by the Vidhava Vivaha Sahaik Sabha, Lahore, it can be seen that over 20% of the remarried widows are Brahmins who roughly come to about 20 per thousand of the Indian population; even Hindu widows of more than 30 years of age are said to have remarried.

Each of the countless sub-castes amongst the four traditional castes shuts itself very often against others of the same main caste so far as inter-marriage and even inter-dining sometimes as in Sraddhas are concerned. Let the stalwart Varnasrama leaders in our society remember that inter-sub-caste marriages are prohibited neither by the Smrithis nor by the decisions of the Indian courts of justice; and yet they seem to have done precious little to remove the popular discredit to such marriages still supreme in several parts of our land. Owing to the narrow-minded social restrictions amongst the sub-castes of the Tamilian or Telugu Brahmins, Smartha or Vaishnavite, Velnadu or Kasalnadu, Vadama or Bruhacharana, Vadagalai or Mathasampradaya, etc., etc., marriages *per se* become difficult if not literally impossible as a result of the ever-growing disparity in the numbers of marriageable males and females in the same sub-caste. Varnashramite Conferences and Mathadhikarees should, in the interests of social rejuvenation, lose no time in successfully educating public opinion on the desirability of an unqualified sanction of inter-sub-caste marriages whatever might be their prejudices against inter-caste marriages.

Two pernicious marriage customs prevalent to more or less extent in South India are those

of Kanyasulkam and Varasulkam. The former was until recently very virulent amongst the Andhras but thanks to the self-less labours of Telugu social reformers like the late Rao Bahadur K. Veeresalingam Pantulu Garu and others, the nasty custom of impoverishing the bridegroom or his people by taking an inordinate bride-price or Kanyasulkam is rapidly dying out to-day though even now some instances of Kanyasulkam are found here and there. Asura marriages and the bride-price connected therewith are in unmistakeable terms condemned by our ancient Smrithikaras. The equally dangerous and the modern fashionable custom of Varasulkam or the bridegroom taking a large Varadakshina from the bride's parents so as almost to impoverish them to the verge of bankruptcy is more virulent to-day amongst the Tamilians than among the Telugus. The Tamilians adopt a prohibitively heavy scale of Varadakshina in kind or in cash. Not merely at the Kalyanasamayam but on many later occasions as well, the Tamil mapillai extorts all sorts of presents from his father-in-law as a matter of right and makes him miserable. Unbearably heavy are the marriage expenses of an average Tamilian who might unfortunately happen to beget all daughters and no sons. People who have equal numbers of sons and daughters often attempt to strike at least a balance between their marriage incomings and outgoings though their primary attempts would often be to see that the receipts exceed the expenditure in the shape of Varasulkam. The normal price of a Tamilian bridegroom depends on many subtleties in the economic law of demand and supply. Even converts to Christianity, I gather, in South India are not free from the baneful influences of Varasulkam.

Whatever might be the material differences between the schools of social reform and social revival with regard to their criteria of the excellence of marriage customs or the standards of morality involved therein, I think that, if India is not to be a glaring social anachronism in the present political evolution, they can and should in the socio-economic interests of society co-operate and devise well-conceived programmes of a practical type for the eradication or reform of most of the evil marriage customs.

Prohibition in India.

By Dewan Bahadur M. Ramachandra Rao, B.A., B.L., M.L.A.*

As you are well aware, the inspiration and direction of temperance work in this country have come for many years from the Anglo-Indian Temperance Association, London, which was founded in 1888 by that good friend of India, Mr. W. S. Caine. Many of our temperance organizations in India are affiliated to this body. In more recent years the Right Honourable Lord Clwyd, the present President, and Mr. Frederick Grubb, the General Secretary of the Association, have done yeoman's service to the cause. It is my most pleasant duty to express on your behalf our deep obligations to them and to all others in Great Britain who have undertaken in the past the task of bringing to the notice of Parliament the evil effects of the excise policy, pursued by the Government in this country

A Central Organization in India

The All-India Temperance Council performed for some years the functions of a central organization for the whole of India and sought to focus public attention on the problems of temperance reforms which were of general application throughout the country. Almost immediately after the introduction of the Reforms, an attempt was made to reorganize this Council to represent more effectively all sections of religious and temperance opinion in India. There has been a general feeling among those interested in this question, temperance reformers and total abstainers alike, that an independent central organization supported by sympathy and advice from the West should be established in the country and that a convention for starting such an organization should be called. We are, therefore, here for the establishment of a movement that is intended to meet the demands of the situation as it is found in India to-day.

The Liquor Problem- A Moral Issue.

It is unnecessary to undertake at this stage any detailed criticism of the success or otherwise of the past policy adopted by the Government. It has succeded in some respects and failed in others, and I shall advert to this matter a little later. The justification for this policy is that the Government of India and the Local Government generally followed and reflected the

* Part of an Address delivered at Delhi on 29th January 1926.

British attitude in regard to the liquor problem. The movement for temperance in Great Britain and the development of British popular opinion have always proceeded in the belief that a moderate indulgence in drink is not harmful, and that any action by the State should be confined to restrictive measures, regulation and control. One of the outstanding differences between the American and British attitude towards the liquor problem is that in the American States it has been made a moral issue, whereas in Great Britain and the other countries of Europe it is not.

Religious Sentiment in India.

The religious tenets and practices of the two great communities of India have prohibited drink to their adherents, and Indian sentiment on the question drink is, therefore, more akin to the sentiment of the American than of the Britisher. The greatest of Hindu law-givers, Manu, has a most drastic edict against drinking. He laid down that "with the drinker of 'madhu' let no one eat, no one join in a sacrifice, no one read. With such a wretch let no one be allied in marriage. Let him be abject and excluded from all social privileges. Cast forth as a vagabond on the earth, branded with indelible ignominy, he shall be deserted by his own parents and tolerated by none." Buddha also enjoined total abstinence from all intoxicants. The Koran has forbidden drink to the followers of the Muhammadan faith.

The Medical Aspect.

I must now make a brief reference to the Medical aspect of the question. In all discussions of the problem, this aspect is now assuming great importance. Many eminent men in Europe and America are now devoting their attention to a systematic investigation of the effects of alcohol on the human organism, and the volume of literature on the subject is growing day by day. A scientific study of the effect of the consumption of alcohol on the health, physical strength, and mental capacity of human beings has been undertaken, and the results, so far as they are available, are interesting to us here in India.

Lieut.-Colonel Sir Leonard Rogers.

The whole question of the use of alcohol in the tropics was discussed only last year by a distinguished medical man, well-known in India. Sir Leonard Rogers referred to and relied on opinions of other medical men of eminence who expressed the view that the common notion that some form of alcoholic beverage is necessary in tropical climates is a "mischievous delusion". "Nothing is more common, even at the present day, than to hear of officers both in India and the West Indies who assert that the climate requires alcohol. These are precisely the climates where alcohol is most hurtful." Sir Leonard Rogers is "convinced that it is quite unnecessary to take the drug in the tropics" though he had no definite evidence that drinking a very moderate amount would do any harm.

Economic Efficiency.

Ladies and Gentlemen, the problem of drink has to be considered from an other equally important standpoint. It is an integral part of the whole question of the social well-being of the people. Whatever differences there may be in regard to the religious and medical aspects of the liquor problem, there is no doubt that wherever Prohibition has been tried, it has profoundly influenced their daily lives. Some of the results of Prohibition have been measured in statistics but there are others, whose effect on the lives of the people it is impossible to estimate by figures. One of the great experiences of the world-war was that definite economics in food and man-power were only possible with restriction and elimination of drink. If this is so at the time of war, it is a self-evident fact that the elimination of drink is even of more value in times of peace. The effect of prohibition of liquor on the community as regards industrial, social and moral conditions, the fact that wives and families get a larger proportion of their husbands' wages, the improvement in marital relations and in sanitary and health conditions in homes, these and other results cannot be estimated by statistics. There is a considerable volume of evidence that these improvements have been secured, that industry has profited very materially through heightened morals and money wages and that savings have increased. These are all very vital considerations in the initiation of a new social policy in this country.

The Position in India.

Whatever may be the difficulties in America, the consideration of a national policy of prohibition as an ultimate goal is, I venture to think, easier in the present conditions of India. As I have pointed out there is in India already a very large body of public sentiment in favour of prohibition. This sentiment, though not effectively organized as yet, is a great factor in the initiation of a campaign of National Prohibition. Several important communities, by the tenets of their religion, look upon total abstinence as a rule of their daily lives. In the second place, the vested interests of the liquor trade in India

are neither so well organized nor so powerful as in Europe or America. There are not, as yet, in this country local associations of the trade linked up into a national federation as there are in Great Britain and other western countries. Moreover, the industry is not in a position to exert any political influence at present either in the Local Legislatures or in the Central Legislature or in the Local Bodies of the country. We are thus in a much better position in this respect than in the West.

Indian States.

Nor do I think that if such a policy is initiated, the rules of the Indian States would lag behind British India in adopting it. In fact, they have already made a start. Sir Basil Blackett made some reference to the difficulties arising from the existence of Indian States in proximity to British territory. Judging from what some of them have already done I think that there should be no difficulty in securing their co-operation. Bhopal, Bhavanagar, Palitana and Kathiawar have already adopted the prohibition of country-made liquors. Travancore and Pudukottah have declared for local option. The British Government has secured their co-operation in various departments of work. A uniform system of administration of the Posts and Telegraphs, Railways, of Stamps and Coinage has been already established, and the Indian States have given their willing co-operation in these measures. There is no reason why they should not extend their co-operation in the introduction of a policy of prohibition of liquor.

The Financial Difficulty.

The total excise revenue, both provincial and central, was about 7½ crores of rupees in 1903-04 and according to the latest available figures (1923-24) the revenue from this source has risen to nearly 21 crores of rupees. The dependence of the provinces on the excise revenue has varied from province to province. According to the figures available for 1923-24 in Madras 39·8 per cent of the total revenue, assigned to the province, is derived from Excise. Similarly, the percentages for Bihar and Orissa, and Bombay including Sind, are 34·7 and 28·7 respectively. Assam and Central Provinces come next with 28·7 per cent and 25.3 per cent. As regards the other provinces Bengal's excise revenue is 20·6 per cent of its total revenue, Burma's 13·9 per cent, United Provinces' 12·7 per cent, and Punjab 11·4 per cent. These figures are appalling. The Government of India and the Provincial Governments are now profitting at the expense of the vitality and morals of the people, and they are financially interested in the maintenance of a system which must inevitably led to their continued degeneration.

Constitutional and Administrative Difficulties.

While the financial aspect of Prohibition is undoubtedly one of our main obstacles, there are also other constitutional and administrative difficulties which require a thorough examination to facilitate the successful adoption of such a policy. One of these is the division of functions between the Central Government and the Provincial administrations in regard to Excise. The control of production, manufacture, possession, transport, purchase and sale of liquor and intoxicating drugs and the levying of excise duties and license fees on or in relation to such articles, except in Assam, is a provincial transferred subject and for this reason the whole of the excise administration is now in the hands of Ministers. Customs is a central subject and is under the control of the Government of India and all customs revenue derived from the taxation of imported liquor belongs to the Government of India. The result is that the taxation of imported foreign liquor is in the hands of the Government of India while the taxation of locally manufactured liquors in the hands of the Provincial Governments and each is interested in the development of its own revenues. Under this system a certain amount of conflict must arise between the Provincial Governments and the Government of India. The Government of India are within their existing constitutional rights in raising this objection, but the result is that all attempts at provincial legislation during the last four years for enacting an effective local option law have proved fruitless.

Governors of the Provinces.

A further constitutional difficulty which has also recently arisen must be mentioned in this connection and that is the action of the Governor of Bombay in refusing sanction to the introduction of a local option Bill by Mr. R. C. Pradhan in the Bombay Legislative Council. That action has naturally evoked considerable public dissatisfaction not only in the Bombay Presidency but throughout India. His refusal is based on Section 80 (c) of the Government of India Act whereby a member cannot introduce any measure in any local Legislative Council affecting the revenues of the Province without sanction of the Governor. The Governor of Bombay has withheld his sanction

apparently on the ground that a measure embodying the principle of local option is a measure which will seriously affect the public revenues of his province. No one can contest the legality of the action of His Excellency the Governor of Bombay. As you are aware, the propriety of his action has been recently brought before Parliament by Colonel Joshua Wedgwood, and Earl Winterton declared that the action of the Governor was within his statutory competence, and that there was no obligation on his part to give any reasons for his refusal. In Madras, Viscount Willingdon gave me the required permission for introduction four years ago, but quite recently His Excellency Lord Goschen refused to accord such sanction to another member of the Madras Legislative Council. The denial of all reasonable opportunities for ascertaining the strength of public and legislative opinion will only intensify the prevailing discontent with the present political machinery of the Government of the country.

LOCAL OPINION.

The action of the Central Government and of the Governors of Madras and Bombay has therefore placed very serious obstacles in the progress of the prohibition movement in India and the recent speech of Sir Basil Blackett speaking as he did on behalf of the Government of India has made the position still more difficult. He said that one of the clear lessons of America's experiments in Prohibition and in local option was that local option and State prohibition involved even greater difficulties than complete prohibition and that "if a policy of local option or prohibition is going to be attempted by Local Governments with any degree of vigour the Government of India will not be able merely to look on". These are enigmatic words, but they are sufficiently explicit for the purpose of indicating that the Government of India are not in favour of local option as a measure either optionally applicable to municipal areas or enacted for a whole province. Any interference in this respect by the Government of India as suggested by the language of Sir Basil Blackett, with the powers of the Local Legislatures and Local Governments, would be greatly resented throughout the country and the difficulties pointed out by Sir Basil Blackett, such as they exist, will have to be faced, as has been done in the United States, till Prohibition becomes the settled policy of India....

CONCLUSION.

The greatest justification for the movement of Prohibition is to be found in the conditions of the world to-day. There are, in India, many advocates of present official policy who seek justification for it in a review of men's early history, the practices of the Stone Age and of an uncivilized tribes. The problem has to be viewed, as I have already said, from the conditions of India of the present day. In the intense competition between the nations of the world, the nation that makes the greatest economy of its human resources will out-grow in numbers, prosperity, and general strength, the nation that does the opposite. The Prohibition movement has achieved the results of economy and prosperity in other countries, and if properly organized, there can be no doubt that it will produce the same results in India.

An important branch of the administrative machinery of irrigation is the system of Canal Telegraph Lines. These are maintained and staffed by the Public Works Department personnel and are employed to keep the executive officers in close and constant touch quite distinct from the Post Office lines and have hitherto been used entirely for official purposes. It has been decided by Government, however, that for the convenience of cultivators in irrigated tracts desirous of bringing their grievances to the notice of canal authorities that the Canal Telegraph Offices in Sind and the Deccan shall be thrown open from 1st October next for the receipt and despatch of paid telegrams concerning matters connected solely with irrigation.

Messages may be addressed only to the Canal Officer or the Executive Engineer concerned, and the rates charged will be the same as those in force in Government Telegraph Offices, *i.e.*, 12 words for 12 annas. Reply Paid telegrams will also be accepted and no reply will be given by wire unless it be prepaid. These replies will not be delivered at the addresses of the parties concerned. The latter will have to make their own arrangements to receive replies at the Telegraph Offices from which the original messages issued. Receipts will be given by the signallers on a regular printed form to the party making the payment and messages of cultivators who do not know English will be translated from the Vernacular into English by the signallers free of charge. Canal service and other official messages will take precedence over those of the cultivators.

Rural Developments.

By Sir Reginald H. Craddock, G.C.I.E., K.C.S.I.*

In some quarters it is the fashion to write as if the Indian Government had up to the present been entirely oblivious of its responsibilities to the rural pupulation, and that it lay upon Indian ministers to repair past neglects, and to devise and carry out policies to transform the Indian plains into granaries, and to convert poverty-stricken and ignorant cultivators, with only a rudimentary knowledge of agriculture, into prosperous and scientific farmers. Such a view ignores entirely the labours of several generations of revenue and settlement officers, the remarkable results already achieved by the agricultural departments, the entire machinery of co-operative credit, the activities of the veterinary officers, and the wonderful effects upon India's prosperity of the great irrigation works and railways. There is, indeed, little that a Royal Commission can find out that the Government does not know already, or cannot collate from the abundant material available in the settlement and revenue reports, and the recommendations of numerous committees and conferences held annually or from time to time. In fact, for years past the Government has been much more active and much better equipped with reference to rural economy than to urban and industrial problems—witness the remarkable success of its efforts in coping with successive famines.

The Ryot is no Fool.

Anyone who has been in close contact with Indian agricultural problems for a great many years knows that the progress made has been on sound lines, and that if these lines are steadfastly pursued this progress will be accelerated and greatly extended. The Indian ryot is no fool; he has long-inherited experience, and though if left alone he is very conservative yet once let him be convinced that a particular crop or a particular method is within his means, and is going to pay him, he will adopt it. But he has no use for an itinerant lecturer with a science degree who merely lectures and passes on. Long before scientific agriculture was heard of in India, particular improvements and more advanced practices came into use. The ryot must know that you know all that he can teach you before he will begin to learn from you. The way to convince the Indian ryot is not by publishing the results obtained on some distant farm, but by demonstration *in situ*.

Practical Demonstration Essential.

The scientific agriculturist must first experiment on a central experimental farm, which is typical of a tract; he must not be in any hurry to demonstrate until he has satisfied himself over a series of years that the seed and the method tested is really a success. The premature demonstration on the village lands that fails puts back the improvement many years. But if the scientific agriculturist is patient and the demonstration *in situ* succeeds, he may be perfectly assured that one after the other the neighbours of a demonstration plot will imitate and adopt his methods. It is thus by the establishment of central farms on which experiments can first be proved, and by the subsequent multiplication of demonstration plots, that knowledge can be diffused. But success is only obtained if there are in the agricultural department earnest practical men, who add to their theoretical knowledge experience of the locality and of the mentality of the cultivators. When a man like this wins the confidence of the cultivator he will be looked up to, consulted, and his advice followed. It is by these methods that the Agricultural Department has won success in provinces where they have been adopted.

Tillers of Soil Must Prosper.

But this is still only half the battle, and if it is to be won, there are other obstacles to be overcome before success can be widely diffused. The great desideratum is to keep the actual tiller of the soil prosperous and contented. This is a more baffling problem than the mere instruction to him of more profitable agricultural methods. A man must not only be taught, but he must have the incentive and the means to apply what he learns. To have the incentive, he must enjoy security of tenure, and to have the means he must command cheap credit. The first of these essentials is dependent upon the enactment and enforcement of tenancy laws; the second upon the organization of co-operative credits. But the first also reacts on the second; for a man with security of tenure can command better credit than the man who has no security to offer, except that of one uncertain harvest.

No Use Helping the Wrong Man.

The Government has done a great deal to

* Part of an article in the January issue of the *Asiatic Review*.

protect the cultivator, much more in some parts of India than in others, but its intentions and its laws are constantly frustrated because the protection reaches the wrong person. In the Zemindari provinces it has secured the landlords, but in many of them the tenant has not got adequate protection, while in the ryotwari provinces the protected ryot has often become a landlord and a middleman, and the tenant beneath him—the actual cultivator—is impoverished and rack-rented. In the Punjab cultivated by large bodies of small landowners, and in the Central Provinces, where every tenant is protected, a high degree of security has been obtained. But in the United Provinces, Bengal, and Bihar the protection is very partial, while in Madras, Bombay, and Burma, wherever the ryot has taken to letting his land, instead of cultivating it himself, the protection has shifted from the actual cultivator to the middleman. This is the great problem, and it is the one on which it is probable that the verdict of a Royal Commission might carry most weight. On the other problem, that of cheap credits, usury laws can seldom escape successful evasion, and co-operative credit is the one remedy that promises most success. It seems unlikely that a Royal Commission could suggest a better, but there can, in view of the magnitude of the problem, be no objection to their trying to find one.

Advantages of Small Holdings

Great stress is sometimes laid upon the ill-effects of minute sub-division of holdings, but this is an evil for which a violent remedy would probably be worse than the disease. The most productive and intensively cultivated areas are those in which population presses on the land; give a man a large area and a low rental and he becomes prone to sub-letting, or else he cultivates in slovenly fashion. Any interference with the age-long joint family system in favour of primogeniture would arouse the most violent opposition. This sub-division of lands corrects itself, for the superfluous members drop out and seek their livelihood elsewhere, or the land passes again, owing to debt, into the hands of a single holder. No legislation and no Royal Commission can keep the thriftless, shiftless, unwilling, or unindustrious cultivator upon the land, and in spite of trials and vicissitudes, a substantial proportion of Indian cultivators are hard-working, contented, and reasonably prosperous. But that fact need not, and should not, cause us to relax our efforts to make the proportion larger and the degree of prosperity greater. There is enormous scope for improvement.

Not Many Over-Assessments.

There are two other matters, on which it is only possible to touch briefly: (1) The effect of land-revenue; (2) agricultural education.

Time was, no doubt, when whole tracts of country were over-assessed. This, with successive settlements and accumulated experience, has passed away. The only places which might be over-assessed now are stray villages in which deterioration due to special local causes has escaped notice and relief. Otherwise, over the country at large, the revenue is so light that the revenue-payer can always obtain rents so high in proportion to the Government assessments that middlemen are created, and rack-rented sub-tenants come into existence. No Commission will now-a-days be able to impeach either the moderation of the land-revenue demand, or the consideration with which it is collected.

Adult Education Wanted.

As to agricultural education, it is useless to multiply science students with an urban up-bringing. Nor is it within practical politics to make millions of ryots scientific farmers with English education. A nucleus of well-equipped colleges to provide teachers and demonstrators is of course necessary, but 90 per cent of the students in agricultural colleges are more anxious to secure posts as teachers and demonstrators than to practise the profession of farming. Moreover, agriculture is a department in which it pays better to instruct adults than children or adolescents; for whereas the youth will not be able to teach the elders, and will not be an elder himself until he has forgotten his school and college courses, any practical instruction that the adult absorbs he will most certainly impart to his children. A shrewd cultivator will learn much more from demonstration plots and farms than his son will acquire if he is taken to an agricultural college, where he learns to prefer urban life to rural, and salaries to farming profits. The training of farm labourers at the farms is also very valuable.

Co-operation Essential.

The greatest results can only be achieved by the co-operation and co-ordination of the efforts of the revenue-officer, the agricultural departments, the irrigation engineer, and the registrar of co-operative credit. The isolated efforts of all these has achieved much, but their better co-operation and co-ordination will achieve much more.

The Rural Problem.

By Mr. H. Conert.

[*The following article deals with an important aspect of the Rural Problem, viz., Agricultural Produce and Agricultural Industries. The writer, as an Engineer connected with Messrs. F. H. Schule, G.M.B.H., Hamburg, and Messrs. Cromer & Co., 12 Clive Street, Calcutta, has had extensive first-hand knowledge of conditions both on the continent and in Indian villages; and apart from his views being those of a man with first-hand knowledge, they are stated in so simple and lucid a fashion that they should prove instructive in these days when the cry is "Back to the Villages".—Ed., M. E. J.*]

The quick development of modern economy has, naturally, created competition and has consequently necessitated special efforts in the agricultural line for the improvement of its products. The development of agriculture dates back to the infancy of historical culture. Necessity has compelled people to experiment in order to obtain better food and by more comfortable means. The highly developed science of the present day has unfolded new possibilities and ways for the further development of agriculture. The most important factors to ensure increased output are as follows:—

The cultivation of fresh soil; the fertilization of land; the improving of the seeds used.

The daily growing necessity for cultivated land, of its own accord, compels the conversion of uncultivated soil into such, and conditions will be greatly improved by the introduction of machinery to aid manual labour. This will minimize and facilitate work and at the same time prove more economical.

Special care has always been taken to improve the soil in order to obtain increased output and better production. It is a well-known fact that, if the same variety of seed is sown yearly, the crop will naturally show a falling away, both in quality and quantity. The reason for this is that the seed absorbs the particular minerals necessary for its nourishment and consequently the soil grows poorer by always imparting those particular minerals. In order to prevent this an annual change of crop is necessary.

To allow the ground to remain uncultivated for one or two seasons tends to improve conditions considerably, but this procedure is, naturally, not very economical. Conditions can also be improved by the use of that particular manure found lacking in the soil. This will stimulate the activity of the bacteria of the soil and the required nourishment for the crop will be gathered in the soil in a short time. In Western countries the changing of the seed and the manuring of the soil has been developed to a perfect science which in Eastern countries is still lacking.

The irrigation of fields for the purpose of fertilizing the soil will be briefly dealt with later. Improvement of production by means of using the best seeds as an important factor has hitherto not been given the attention it should receive. The grain consists of shell, corn and germ. The latter is the life-centre of the grain. It is the embryo of the future plant which begins to grow as soon as surrounded by favourable conditions, *i.e.*, heat and moisture. The corn serves as nutrition as long as the root of the young plant is insufficiently developed to absorb its own nourishment from the soil. Every corn in its fertilizating state breathes in oxygen and exhales carbo hydrate which creates heat and tends to help the start of the growth of the young plant.

It is, therefore, very important to store the seeds in a cool and dry place. Should proper care not be taken in storing, it causes premature fertilization, with the result that the power of the embryo is lessened in some cases and totally destroyed in others through the corn being partly decomposed, whereas, with care, the life of the seed could be preserved for years.

In order to produce a perfect sowing seed it is always necessary to allow the grain to fully grow and not cut it before it is ripe. The half-ripe or spoiled seed should never be used for sowing, as part of it does not grow at all and that part which does is naturally very weak. It is, therefore, a matter of great importance that the good seeds be carefully separated from the inferior ones.

Experience has proved that seeds possessing full power of life will yield a much larger crop whilst for the purpose of sowing only half the quantity serves.

In order to obtain the best seeds for sowing and the inferior for foodstuff, special machinery for separating and grading the seeds has been constructed by manufacturers who specialize in this particular line. The outlay in expense in this connection when compared with results will prove infinitesimal.

As a result of the improvements in modern machinery, it is now possible, and at the same time economical, to work the products of the land locally instead of despatching them to the cities or towns for the final finish. The reason is that labour is cheaper in the villages than in the towns. It also saves unnecessary freight as the by-products and the wastage can be utilized locally and only the finished production which is ready for sale need be transported.

Machineries are available in all sizes and for all capacities beginning from the small machines for hand and power drive, serving domestic purposes, up to the highest commercial requirements. Machines and mills have been so much improved, owing to increased demand, that they are, from every point of view, quite perfect and up-to-date. Self-contained mills of different capacities for working various "dal" grains, oil-seeds of every description, wheat, etc., are now available in India. The driving power has been reduced to a minimum and manual labour very considerably saved. Erection and working are so simple that any inexperienced man can handle the same without causing any damage. The finished products are of the best quality and properly graded.

The mill manufacturing industries for producing Rice, the most important grain in India, has reached a stage of perfection. These mills are capable of producing high class finished products from every kind of paddy—boiled as well as raw.

These self-contained mills consist of various independent machines for the different working processes, *i.e.*, cleaning, shelling, whitening, polishing, grading, etc. The by-products, such as meals, are pure and unmixed with husks. They are of high nutritious value and fetch good prices as food for cattle. The husks are not ground but remain whole so as to serve as fuel for the boilers. The unrequired balance will always find a ready market at a good price for any other burning purpose.

Special cooling arrangements through ventilators are provided in the mills in order to keep the rice cool during the operation, and in consequence it maintains the white, natural lustre of the grain.

The milling of raw paddy obviates the cessation of work during the rainy season. The boiling of paddy is not only a very expensive procedure but sometimes quantities of paddy get spoiled during the process of drying causing heavy losses. If the paddy gets repeatedly wet by rain it creates a very unpleasant odour and is unpalatable and quite unfit for human consumption. It is, however, a noteworthy fact that, owing to the invention of modern mills, all these drawbacks are no more in existence.

The general description given above may serve to impart ideas for the development of Indian agriculture and its industries.

For any special information the writer of this article is always at the disposal of any interested reader.

Agriculture and Science.

By Albert Howard, Director, Institute of Plant Industry, Indore.*

The application of science to agriculture is a comparatively modern development. Since 1834, when Boussingault laid the foundation of agricultural chemistry, an increased and increasing amount of attention has been devoted to agriculture by men of science. I propose briefly to recapitulate some of the more important advances which have resulted from this impact of organized knowledge on the most ancient of the arts and then to deal in greater detail with some of the agricultural problems of to-day in the solution of which science is certain to play an important part. In reviewing the development of agricultural science, two things must be kept in view,—the influence of science on practice and, what is perhaps more interesting, the lessons which agriculture has taught and is still teaching the scientific investigator. I hope to show that the great benefits that have flowed from the application of science to practice are not always on the side of agriculture but that scientific method itself has sometimes profited from the association. Further, the man of science has had to realize that progress is possible without the aid of science and that some of the greatest develop-

* Part of Address delivered before the Indian Science Congress, January 1926.

ments in agriculture, even at the present day, have been brought about by empirical means.

Instance of Rice Cultivation in India.

Examples of notable advances in agriculture which have taken place without the aid of science are to be found all over the world. In the Orient, perhaps the most remarkable is the cultivation of rice which has been developed by the people in the deltas of the great rivers to a high degree of perfection and carried up the slopes of valleys by means of a system of irrigated terraces. The care and skill which have enabled the cultivator to grow a semi-acquatic crop like rice on the steep hillsides of India and Ceylon cannot fail to command our attention and respect. In this development, science has played no part and even now has not completed the preliminary analysis of the factors involved in the growth of the chief cereal of the tropics. We can only guess at the sources of the nitrogen made use of by the rice plant. Again in Gujerat, in this Presidency an indigenous system of agriculture has been evolved to overcome a most difficult set of soil and moisture conditions. In order that the tilth may be maintained and the moisture conserved, speed is essential in managing these soils. To get over the fields quickly, the crops are grown in straight lines; simple but effective implements have been designed for sowing and interculture and a fast and powerful breed of oxen has been developed. The adaptation of means to end is remarkable and great natural obstacles have been overcome by the peasantry unaided. In the Occident, equally striking advances have been made by empirical means. Sub-soil drainage, the modern systems of tillage, the great progress which has been made in the breeding of live-stock, the Norfolk four-course system of rotation—which followed the introduction of the turnip crop into Great Britain in 1730—are all improvements which owe nothing to the scientific investigator.

Improvement of Wheat.

The practical results which have followed the application of botanical science to agriculture during the last quarter of a century are very considerable. In wheat, for example, the labours of Saunders in Canada culminated in the production of Marquis—a variety obtained by crossing Red Fife with an early Indian wheat (Hard Red Calcutta). Marquis closely resembles Red Fife in appearance in the field and in the high quality of its grain. It differs from the parent in earliness and in having a shorter straw. Marquis is the most successful hybrid yet produced. Over 20,000,000 acres of this variety are grown in Canada and the neighbouring States of the Union. In Australia, the new wheats raised by Farrer are widely cultivated. In England Biffen's new hybrid Yeoman has definitely established itself in the wheat-growing areas of the country. In India, the types produced by the Pusa Research Institute already cover more than 2,000,000 acres. The total area of the new varieties of wheat produced during the present century must be little short of twenty-five million acres. At a moderate estimate, the increased wealth produced by the application of modern methods of plant-breeding to this crop must be at least 20,000,000 sterling a year. If this annual dividend is compared with the capital invested, the return is many times greater than that yielded by the most successful industrial enterprise.

A survey of the development of agricultural science during the last ninety years reveals the important fact that until quite recently the approach has almost always been by means of one science. The researches fall into classes, each class coinciding with the limits of some well-defined subjects like chemistry, physics, bacteriology, entomology or botany. Not only can the researches be easily grouped but the organization of agricultural workers closely follows the artificial sub-division of science which has grown up in the Colleges and Universities as a result of the exigencies of teaching and examinations. Further, the history of the application of each science to agriculture follows much the same course. First of all, there is a period of optimism after the publication of the early results. This is slowly followed by a more chastened outlook as it becomes apparent that the new science is not quite adequate by itself to deal with the many-sided problems of practice. Finally, direction is gradually lost and the effort not infrequently loses itself in detail.

I propose at this stage to examine two of the chief problems which now confront the agricultural investigator in India and I hope to show that these problems do not fall within the limits of any single branch of science. It naturally follows, therefore, that the conventional method of attack cannot hope to be completely successful.

Irrigation and Agriculture.

The discovery of the right use of irrigation water is one of the chief tasks now before the Agricultural Department in India. As every one knows, everything goes well in this country

if the rains are timely, well distributed and ample in volume. Trade flourishes, there is contentment in the villages and in due course the officials connected with finance have the pleasant duty of announcing either the remission of taxation or suggesting useful schemes on which the surplus revenue can be spent. All this follows because water is one of the limiting factors in the growth of crops. Hence the development of canal irrigation from rivers to supplement the rainfall. At first sight, all that seems needed is that the engineers should dam a river and distribute the impounded water over the countryside according to a time table. The factor, shortage of water, which limits production, can in this way be removed. For the canal to pay its way and to bring in the greatest revenue, the water has to be distributed so that the most expensive crops like cotton and sugarcane can be grown. This involves fairly frequent watering so that there is no cessation of growth between sowing and harvest. Hence the institution of perennial irrigation and the concentration of the cultivated area commended so that the highest duty of the water and the maximum revenue can be obtained. When, however, we carefully compare the growth of the same crop under canal irrigation and under normal rainfall, interesting differences can at once be directed. The irrigated crop as a rule does not appear to be quite at home. Ripening is frequently delayed and the quality of the produce is apt to be irregular and inferior. Further, the standard of cultivation under a canal tends to deteriorate. After a few years, the producing power of the soil falls, patches of alkali land often appear and grow in size and there is a tendency for the villages to become malarious, compared with the best well-irrigated regions or with localities where the crops are grown on the natural rainfall, the well-being of both plants and animals on the perennial leaves a good deal to be desired.

Canal irrigation in the hands of the cultivator seems to put a brake on the wheel of life. In some places, as for example, on the Nira Canal in Bombay, the wheel of life is brought to a standstill altogether by the land becoming a wilderness of alkali on which nothing can grow. Here the canal has produced dead soil. How is it that things have gone wrong and why is there this difference between experience and theory? The answer is to be found in the fact that rainfall and canal irrigation are different things from the point of view of the plant. It is true that rainfall and irrigation have one factor in common, namely, the provision of water. In almost every other respect, however, they are quite different. Rain is a saturated solution of oxygen in water and usually reaches the soil so slowly and at such long intervals that it does not destroy texture to anything like the same extent as canal water does. Moreover, it supplies the soil with oxygen in a highly effective form. Canal water is much poorer in oxygen, it destroys the tilth and the total period of its application to any particular crop is only a matter of an hour or two. Further, when the surplus irrigation water cannot flow away underground, there is a gradual rise of the sub-soil water-level which may reach almost to the surface. Small as these differences at first sight appear, nevertheless, they are sufficiently important in the course of a few years to bring about a marked fall in the fertility of the soil.

Method of Growing Crops and Incidence of Malaria.

Why there should be such a tendency towards intense malaria, when dry crops are grown under canal irrigation, is a matter which has not yet been satisfactorily explained. Is it merely due to the accumulation of surface water providing grounds for mosquitoes or is a part of the answer to be found in the lowered resistance of the people? Have the wheat and other food grains, produced under canal irrigation, the same food value as those grown under natural rainfall or with the help of wells? Do the nutritive and vitamin values of food grains vary with the conditions of their growth? Science cannot at the moment answer these questions but these are indications that the food value of the same cereal depends on the conditions under which it is grown. This matter urgently calls for careful investigation. McCarrison, working in Madras, was on the eve of throwing light on these questions when his researches were brought to an end by retrenchment. During the course of an exhaustive enquiry into the food value of the rices in common use in India, this investigator found the various kinds differed considerably in nutritive value. No reason for this could be detected in their chemical composition and it appeared that the differences might be due in part to their vitamin content. As rice was available at the moment, the matter was put to the test of experiment using the same kind of millet from the permanent experimental plots at the Coimbatore Experiment Station. These plots have been in existence

about fifteen years and have been manured in various ways. In the feeding experiments on animals, the millet grown on soil manured with cattle manure was more nutritious and contained more vitamins than that grown on soil manured with artificial manure; that grown on exhausted soil being the worst of all in these respects. McCarrison writes:—"I was in the middle of this work when my researches came to an untimely end owing to financial retrenchments in India, so I was not able to repeat the experiment nor to extend them to other grains." That there does exist a definite relationship between the incidence of malaria and the way crops are grown is suggested by the observations of Bentley in Bengal. In this Province, the prevalence of malaria and the inundation of the rice areas are closely connected. In such tracts as Eastern Bengal, which are subject to annual inundation, the rice crops are excellent, there are practically no waste lands, the population is large and malaria exists so slight to an extent as to be almost negligible. In parts of Central and Western Bengal, however, quite a different state of things exists. The greater part of the Districts of Nadia, Murshidabad, Hooghly and Burdwan have been deprived of the natural inundations to which they were once subjected by the construction of river embankments. In the old days, 60 or 70 years ago, these embankments were kept in such bad repair that they did not prevent flooding of the country and their harmful effect was not apparent. When they were made really efficient barriers to the inundation, the protected areas began to suffer in several ways. The fertility of the soil diminished, the area of waste land increased, population declined and with it malaria increased to an appalling extent. Where rice is grown to perfection there is little malaria; where the crop is cut off from the necessary inundation, malaria is rife. In all probability the same rule applies to dry crops like wheat. It may easily prove to be that the intense malaria which often follows in the wake of the canal in North-West India is not altogether due to the mosquito but is a consequence of the lowering of the quality of the food grains grown under canal irrigation. The subject is one which calls for early investigation and it is hoped that McCarrison's interesting work on the influence of soil conditions on the nutritive value of the chief food grains of India will be continued and that the investigation will be widened to embrace the effect of the quality of wheat on resistance to diseases like malaria.

Canal Irrigation and Fertility of Soil.

Of equal importance to the increase in malaria is the deleterious effect of canal irrigation on the fertility of the soil. When the desert is conquered by the canal, all goes well at first and large crops are raised with a comparatively small volume of irrigation water. As time goes on, however, the soil particles fall into a condition of closer and closer packing and as the natural texture of the desert soil is lost, more and more water is needed by the cultivator to raise his crops. Defective soil-aeration soon becomes a limiting factor in growth. The yields begin to fall off with surprising rapidity as is shown by the results with wheat at Mirpukhs in Sind. The next stage is the appearance of alkali patches which slowly increase in size till the land goes out of cultivation. The rate of transformation of potentially fertile desert soil into useless alkali land is, other things being equal, inversely proportional to the size of the soil particles. Open, porous soils are not affected to any great extent by perennial irrigation. Close, heavy soils, containing a high proportion of fine particles, are, however, particularly prone to develop the alkali condition.

The soil, however, is much closer in texture than that of the Canal Colonies of the Punjab, there are no deep sand layers to assist percolation, and the level of the sub-soil water is comparatively near the surface. There is therefore every reason to fear that the soil conditions of the area commanded by the Sukkur barrage are such that intensive perennial irrigation will produce a vast expanse of dead alkali land. Such a disaster can probably be averted by altering the method of distribution so as to give the land as much rest as possible from irrigation. A new method of irrigation must be evolved (intermediate between the modern perennial system and the old basin method) by which irrigation and soil-aeration can be combined. This is one of the results which is expected from the new Irrigation Experiment Station in Sind which has just been sanctioned by the Government of Bombay.

Diseases of Plants.

When we turn to the biological aspects of agricultural work, the great complexity of the subject and the interaction of the fields, covered by the separate sciences, become most apparent. In following the growth of a crop from the seed, many branches of natural science are involved. The food materials provided by the soil are prepared by bacteria: drawn into the plant

and transported by physical means; elaborated into useful products by chemical processes while the resulting growth produces organs which are studied by the botanist. Biological questions are, therefore, a complex of all sciences. Many of the problems of agriculture, particularly in the tropics, centre round the growth of the plant. How closely this complexity influences the successful solution of agricultural problems is seen when we consider the diseases of plants.

In recent years perhaps more attention has been paid to the diseases of crops than to any other branch of agriculture. One reason for this would appear to be that the detailed examination of the insects and fungi concerned in plant diseases can easily be carried out by specialists in an ordinary laboratory and do not involve much equipment. In spite of the vast literature on diseases which has accumulated as a result of the researches of the last thirty years, agricultural practice has been remarkably little influenced. This result at first sight appears surprising. It seems so obviously the right thing to ascertain the nature of the pest and to attack its weakest and most vulnerable phase. It is, however, now being recognized that direct attack by assault and battery is nearly always useless and economic entomology and mycology are becoming transformed into plant pathology, thus bringing these subjects into line with the new developments in medical thought.

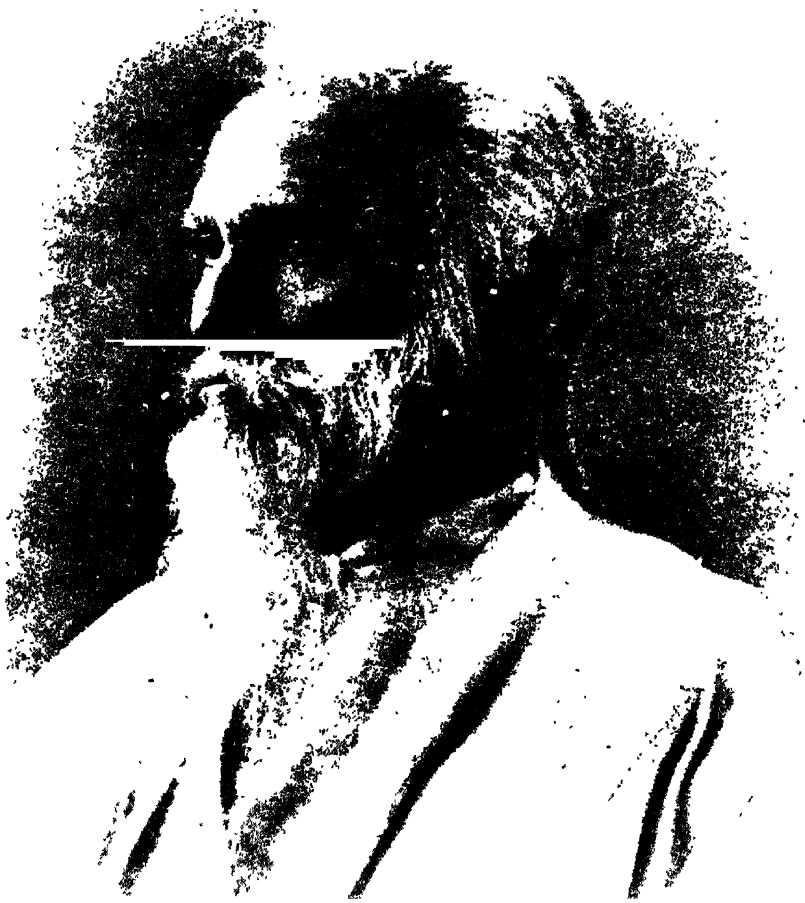
Some new method must be devised by which science can be more fully utilized in the advancement of agriculture. If we continue as at present, the organization itself will soon become a bar to progress. The immediate question is: Is there any method other than that or the single subject by which science can deal with the problems of the cultivator?

Difficulties to be Solved.

How is the difficulty to be solved and how can science be brought to bear in a more effective fashion? Several suggestions have been made of which it is proposed to discuss two, namely, team work and a widening of the training of the investigator accompanied by a gradual reorganization of existing agricultural departments. The idea of team work in the solution of agricultural problems is a comparatively recent one and is a recognition of the complexity of present-day problems. Team work is another name for co-operation by which workers in single sciences can join forces to attack a complex question. It is a useful method for research institutes at which a number of graduates are working as apprentices in methods of research. By this means the post-graduate student not only has the opportunity of using his own knowledge but also comes in contact with the essential nature of large questions. In agricultural research it is an excellent method for certain centres at which experienced investigators can direct and co-ordinate the efforts of advanced students. At the most, however, team work can do little more than make the most of a bad job.

An alternative to team work in agricultural investigation is to so widen and deepen the training and post-graduate experience that the individual can successfully attack problems now attempted by the team. At first sight, such a suggestion is liable to be ridiculed and set aside as utterly impracticable. Nevertheless, I am convinced that it is the direction in which progress is most likely to be made. In putting these ideas into practice, however, we are at the outset confronted with a great difficulty. On the one hand, we have to train our future agricultural investigators in several sciences so that they can bring knowledge to bear on the problem in hand from several points of view. On the other hand, as knowledge accumulates, there is so much to learn that men have to specialize in one branch of science in order to avoid too long a period of training. There are thus two opposing tendencies to be reconciled.

From June to November, 1926, there will be held in the City of Philadelphia an International Exhibition in celebration of the 150th anniversary of the signing of the Declaration of Independence and for the purpose of exhibiting world products in arts, science and industry, in trade and commerce, and "in the development of the products of the air, the soil, the mine, the forests and the seas'. A Resolution of Congress provides for the co-operation and participation of the United States in the Exhibition and for the admission, free of duty, customs fees or charges, of all articles imported from foreign countries for the sole purpose of display at the Exhibition. Official invitations have been conveyed to the British Government, the Governments of the Self-Governing Dominions, India, and all other British Colonial Governments to participate in the Exhibition. Private firms and individuals interested in the Exhibition can obtain particulars from the Trade Commissioner for the United States of America, Church Gate Street, Rustom Building, Bombay.



The late Dwijendranath Tagore



Nawab Hyder Nawaz Jung Bahadur (Mr. M. A. N Hyderi) of Hyderabad who recently delivered the Convocation Address of the Panjab University.

Courtesy *Madras Mail*

Poverty Problems: An Educational Colony.

By Capt. Petavel.

In considering the question how we are to start an educational colony, it is important first to be quite clear about the fundamental principles. Most people will ask how we hope to succeed when so many attempts have been made and are being made to establish self-supporting education, which have met with such mediocre success. Every one of us can think of the efforts of the kind being made in India at the present moment by very able and earnest people with excellent results educationally, but they are not quite self-supporting. The first thing they will ask us therefore is how we are going to succeed where others have failed.

Composition of the Colony.

The answer is very simple indeed. It is entirely a matter of science, capital and disposal of produce. Take for instance the missionary organizations that have started educational colonies.

The condition of success of the educational colony is to have as many workers as for industrial purposes can be reckoned as adults and of children. Now, as a matter of fact, this does not mean at all that the staff must be as numerous as the pupils. In the first place, the industrial staff would work full time of course while the children will work ½ time and therefore to fulfil the condition, as I have told you, the industrial staff must be one adult to every 3 children. As a matter of fact, we would not need even as many as that, because working by good modern methods, a child joining an educational colony at 8 would be as good as an adult in many branches when he becomes 14. Now the mission society might be able to get all the capital required and we know that there are certain industrial missions that are really well capitalized.

Method of Distribution.

Then comes the question of the disposal of produce. It is a terrible problem. As we know, the keenest business people with their whole mind on this problem, thinking and caring for nothing else, may succeed or not. Very often indeed they are not successful. Clearly then, mission societies are certainly right in not capitalizing their educational colonies on a scale enough to make them economically successful. The missionary societies and educational establishments, generally, can face a calculable annual deficit, securing expenditure as they receive it, but quite wisely they refuse to face the risks of commercial and capitalistic speculation. Hence our educational colonies do not pay.

The first thing that we have to do, therefore, is to place our finger on the weak spot, economically speaking. Why exactly does Witzeval succeed with its tramps and vagrants, whilst these establishments employing much more hopeful material fail?

Simply because, Witzeval was amply financed and backed by Government who saw to it that its surplus products should find a market. Witzeval, moreover it has to be said, is particularly well situated in that it is a land development scheme. It applies its labour to feeding its workers and improving its vast property which once marsh, is now being made by it into good land. The same conditions can be reproduced in other places only in different forms.

Education, an Industry.

Then again, the fact of enormous importance in connection with our pioneer educational colonies would be that educational work will be made a source of income to them. It would be their main object in fact at first. I think I have sufficiently answered the question that occurred to us all and everyone would be clear that we do not hope to succeed where others have failed by being more clever than they have been but by starting in the right way in the light of economic knowledge which was quite impossible to them, having to deal, as all of them had, with committees of people who were not economists.

Outline of the Proposed Scheme.

Now let me outline the schemes we are thinking of now to a start. Those who 'pay the piper call the tune'. Those who are going to contribute capital and as I told you already, your generous Development Minister among them, will have to decide in consultation with Government whose help we ask for which we shall choose of the many sites that are now being offered to us.

Having selected a site, we should call for young men of educational qualifications and with a capital of, say, Rs. 250 upwards to join the colony. If we have sufficient capital to put up the little bungalows which should first be Kacha, married men might join us with their families. If the capital is not

sufficient we shall have to call for bachelors at first or those who will bring their families at a later stage. Our plan will be to pay these young men approximately half of the salary of an ordinary teacher for half time. This earning then would be in addition to what they will earn by their own industrial or agricultural enterprise. The boys, as I was pointing out in my lectures, would have approximately 3 hours of productive work, 3 hours of schooling, 1 hour of preparation and 3 hours of games, Boy Scouting and sport generally, which is an essential necessity to make them grow up vigorously.

The fees we expect from the boys will be about Rs. 15 a month at first. A boy however, would have to make himself efficient enough to earn his food within a year or so; failing that, he would not be considered suitable to the educational colony. We do not propose to give these young boys any vocational training. The practical work is intended to be versatility training which is what is required for young boys. It is just the very opposite to vocational training, which on the contrary is specialization, the very thing to avoid in the case of the young.

The productive work however, will teach the boys to be practical. It would be systematically related to the school work, so as to make it a practical application of what is learnt in class and make it in every way part of the educational scheme and then the educational colony training will be the best of all.

An Urban Scheme.

I shall now outline briefly another kind of educational colony training which I suggested for the Calcutta Corporation for the Municipal free schools which educate of course poorer boys and give them only very short hours of schooling. I proposed that the Corporation should take all the vacant lots and organize the Municipal school boys to cultivate them under the direction of their Instructors. This work should be done in such a way as to pay for itself. The Instructors should be paid and quite well paid in kind in the produce of these gardens. I have never overlooked the fact that there are difficulties in connection with this plan, but vacant lots cultivation has been taken in many places and it can be done with some degree of success everywhere, and with this, as with everything else, the more we try, the more we shall find we shall do. Then I propose making these children the distributors of a co-operative organization by which they could be able to earn a little at the same time getting some practical commercial education.

Idea of a Tamil University.

By the Hon'ble Sir T. N. Sivagnanam Pillai.*

The question has also been asked in certain quarters, "whether a separate University for the Tamil area will be necessary, after the withdrawal of the Andhra and Kerala elements from the University of Madras?" This question arose in the Tanjore meeting in August last, and was well thrashed out. Those who consider it unnecessary to have a separate university for the Tamil area seem to think it possible to make the Madras University subserve the ideals of the Tamil University, after the Andhra and Kerala elements have withdrawn from it. This cannot be; for Madras being the seat of the Provincial Government, it will ever continue to attract students from all quarters, and the University there must, therefore, be cosmopolitan. It must offer equal attractions and afford equal opportunities for all people of all languages. It must be allowed to give effect to the programme defined in the resolution passed in October 1920. "That the Senate is of opinion that the time has come when the increasing demand for liberal education in the Presidency should be met by the establishment of more Universities, and by the redistribution of the territorial areas of the existing university so as to provide as far as practicable at least one university for each principal linguistic area within the Presidency, and that the establishment of a university for the Andhras should be taken up in hand without further delay." When the various linguistic areas affiliated with the Madras University determine each upon a separate University of its own, the Madras University will fall within the territorial limits of 10 miles' radius from Fort St. George, and feel free to develop itself into a teaching and residential university as foreshadowed in the Preamble to the Madras University Act of 1923. I may, therefore, conclude that in the interests of the Madras University, and in the interests of themselves, the Tamilians will do well to organize a University for themselves;

*Part of an Address delivered at Trichinopoly.

and that must be known as the Tamil University, on a linguistic basis, and bringing under its purview the Tamil area.

Types of Universities.

Of what type shall the Tamil University be ?—I shall consider this question next. The types of universities that we are generally familiar with are (1) the unitary, (2) the affiliating, and (3) the federal. Of these, the unitary type denotes a university centred in one particular locality and dealing with its students directly without the intervention of colleges. The Hindu University at Benares and the Muslim University at Aligarh come under the type of unitary universities. The terms "Residential" and "Teaching" only emphasize certain aspects of the unitary university, and do not imply a type different from the unitary university. The term "affiliating" is loosely used in two distinct senses. The Madras University is an affiliating university in its relations with the mofussil colleges lying outside the ten miles' radius from Fort St. George. It is also connected by "affiliation" with the University of Oxford. But the nature of affiliation of the mofussil colleges with the Madras University, and of the Madras University with the Oxford University is quite distinct. The mofussil colleges are affiliated with the Madras University only for purposes of training and presenting their students to the examinations held by that University. The Madras University is on terms of affiliation with the Oxford University in so far as the latter recognizes for educational purposes the degrees conferred by the former. The federal university has been defined in the resolution of the Government of India issued in 1913 "in the strict sense of several colleges of approximately equal standing separated by no excessive distance or marked local individuality grouped together as a University". The University of Madras in its relations with its constituent colleges lying within the 10 miles' radius is a federal university, although it is exercising affiliating powers in its relations with the mofussil colleges. Each of these three types has got its own distinct advantages and disadvantages. The unitary university is possible only if its area of jurisdiction is limited, and all its residential and teaching functions of the unitary university are greatly tempting attractions, and although a university of the unitary type is what every educationist greatly favours, it will not serve as the type of the university for our immediate consideration for the Tamil Nadu, comprising of 11 districts, covering a total area of about 50,000 square miles and with 16 first grade and second grade colleges within its jurisdiction. The affiliating university may lay credit to the fact that it is the only possible type suited for spreading collegiate education over a wide area at a low cost. This could have been the most favoured type in 1857. But it cannot command many supporters in 1926. The experience of the affiliated colleges in the mofussil with the University of Madras is enough to scare away any reasonable man from entertaining the idea of creating a new affiliating university. The disadvantages of an affiliating university outweigh the solitary advantage of cheap spread of education derived from it. The area commanded is decidedly too vast for effective supervision. The university is an examining body and the highest ambition of the affiliated colleges is only to coach up the students for the examinations. The standard of efficiency in the mofussil colleges is maintained by enforcing a rigid conformity to prescribed curricula. This makes education much worse as it offers no scope for the development of originality or the practice of individual methods which will find favour with particular professors in direct and close touch with local conditions.

Tamil University of the Federal Type.

The only type which I can reasonably think of, to which the Tamil University may conform, is the federal type. The chief features which characterize a university of a federal type is the recognition as a matter of right of the equality of its constituent colleges for representation on its governing bodies, and the recognition of their right to claim such representation. The equality of the constituent colleges need not be an "absolute equality", each college demanding an equal number of representatives in the governing bodies. It must be a "proportional equality" based on considerations of the relative strength of the constituent colleges. The federal type again resolves into three distinct sub-types, the centralized, the semi-centralized, and the decentralized. The Madras University will conform to the centralized federal type, when the Andhra, Tamil and Kerala elements withdraw from it. The semi-centralized federal university comes into being when the rival claims of two centres within the University area have to be reconciled by an agreement to recognize their claims by affording them alternately all the advantages of the seat of university. The Mysore University, which holds its functions alternately in Bangalore and Mysore, comes under this type. This will be possible only when there are only a very limited number

of centres in the university area, all lying within reasonable distance from one another, each within a group of colleges pursuing a particular kind of work. The decentralized federal university will be the type when there are many such centres in the area, and widely apart, each anxious to assert its own claims as the seat of university, and each denying every other any virtual supremacy over the rest. It is this type of a decentralized federal university that suggests to me as a possible type for the Tamil University, when we see special pleading for each centre and when we have to effect a compromise among the rival claims. When, and if, the university course is limited to a period of three years after the Entrance Examination, all the existing second grade colleges will automatically evolve into first grade colleges, all on an equal footing with one another, and will then form the constituent colleges in the Tamil University of the decentralized federal type. When the equality of the constituent colleges is recognized, there is not likely to be much objection to have Trichinopoly as the seat of the university. Barring all other considerations, Trichinopoly is the most central place in the Tamil area, readily accessible by a 12 hours' journey from Tinnevelly in the South, Madras in the North and Coimbatore in the West. Select centres like Chidambaram, Coimbatore and Madura or Tinnevelly may be allowed to provide post-graduate courses, and develop into possible centres of separate universities, when in the fulness of time a distribution of the Tamil University area into smaller areas each commanded by a semi-centralized federal university, could be effected. I shall make my proposal plain by a concrete example. A particular centre like Tinnevelly or Madura, each of which has a group of colleges within a limited area, may be allowed to develop, and when the time is ripe, the three districts, Madura, Ramnad and Tinnevelly, might constitute into a university area of the semi-centralized type, called the Pandya University, and distribute equal concessions between centres at Madura and Tinnevelly like the Mysore University. Likewise the areas comprised by groups of districts like Trichinopoly, Pudukotta and Tanjore; South Arcot, North Arcot and Chingleput; Coimbatore, Salem and the Nilgiris, may determine their own semi-centralized federal universities for themselves under appropriate names. I may even prospect further and say that a semi-centralized Pandya University might at some future time split up into centralized federal universities in Madura and Tinnevelly respectively residental and teaching in their outlook. Thus by starting the proposed Tamil University on a decentralized federal basis now, we will be ensuring the possibility of raising residential and teaching universities in various centres in the Tamil Nadu. This appears as the best compromise that can be effected between the rival claims set up by different centres. And I dare say that this must be welcome to all Tamilians, as it affords full and free scope for manifesting their local patriotism by developing their own local colleges towards the prospect of creating a unitary, residential and teaching university in their respective centres.

Finance.

The history of English education in India has been one long series of experiments, none of which has proved as the right solution of the educational needs of the people. The only solution that can be effected is by a whole-hearted and unanimous effort of the various sections of the people to determine on their own individual programmes of educational advance. Happily now, education is a transferred subject, and in charge of a people's representative. With all good-will to listen to the popular voice it may still be difficult to command the required finance. The Government must concede to the wishes of the people and lay at their disposal a portion of the funds earmarked for education, which will be commensurate with the revenue of the area. I am also hopeful of princely munificence from the territorial magnates and Matadhipathis in the Tamil land. The Local Boards and Municipalities will also yield to the popular demand to contribute a reasonable percentage of their annual income. Funds can be raised by public subscription as well. The difficulty of finance may loom large at first sight, but by patient effort this difficulty can be surmounted. I fervently hope that you will lay to heart the sacredness of the task and endeavour to raise the 20 lakhs of rupees understood to be required for giving effect to the scheme.

The Next Step.

Our next step will be to devise a working basis for the Tamil University. All conditions favouring, we may start in right earnest as early as possible. The establishment of a University will be meaningless without a simultaneous reorganization of the systems of pre-university education. We may, however, start with the available material and effect the necessary changes in the course of five or more years as the case may be. The Trans-

lation Bureau must be constituted and made to commence the work first. In the course of five to ten years the necessary text-books will be made available, and a thorough reorganization of education in the area commanded by the Tamil University can be effected by slow degrees. To begin with we may start the university with one or two faculties, and gradually increase their number. This will much minimize the difficulty of finding the initial outlay, as the total cost of establishing a separate university will be distributed over a number of years. I must sound here a note of warning to enthusiasts who might wish the inauguration of the Tamil University within a year or two. We must begin with a definite programme of constructing the University and wait awhile till the best of our ideals are realized. With these words I wish you godspeed in your labour of love, learning and light.

Sandalwood Oil Industry of India.

By The United States Trade Commissioner in India.

The sandalwood oil industry in India has been of very recent growth, and is principally confined to the State of Mysore, which has extensive sandalwood forests within its boundaries. While the neighbouring districts of Coimbatore and Coorg are also noted for a fair share of sandalwood production, Mysore has all the advantages incidental to the manufacture of the oil, being supplied with cheap electrical power. Up to 1916 the State of Mysore, in common with the Madras Government, had been exporting all its sandalwood cut in the area without refining it in the country. The output of sandalwood from these three districts then amounted to 3,000 tons per annum, of which 750 were consumed locally and 250 by the other parts of India. The principal consumer during these years was Germany, which purchased nearly three-fourths of the exports from India, which amounted to about 2,000 tons. Mysore's share of the production amounted to nearly 2,500 tons, Coimbatore and Coorg between them supplying about 500 tons.

Sandalwood oil is required for various purposes, the three principal uses being for perfumery, medicine, and the manufacture of soaps.

During the war when Germany was cut off from the rest of the world, the Mysore Government was getting no revenue from sandalwood exports. In 1916, therefore, two factories for manufacturing the oil were started in the State, one at Mysore and the other at Bangalore City, and operation on full scale commenced in 1917. These two establishments are reported to be the largest sandalwood oil producers in the world, with a total annual output of 200,000 pounds of oil. The director of one stated that this output could be increased still further and that the State is now in a position to meet the world's demands for sandalwood oil.

The plantations in charge of the Agricultural and Forest Departments are well cared for and the supply of sandalwood is said to be unlimited, the system of felling mature trees and replanting the cut area being carried on systematically.

Australia, the Netherlands and East Indies manufacture a similar but lower grade of oil. The Australian oil, although not actually classified with Indian sandalwood oil, is exported in large quantities to America, where it is used for blending purposes. The Dutch East Indian product, known as "Macassar oil," is equal to the lowest grade of Mysore oil and is also exported in moderate quantities to America and the continent. The Mysore product is chiefly exported to Japan, where it is used for medicinal purposes, the other two oils mentioned being of a lower grade and not suitable for either internal or external use.

The following from the "Enquirer" on Sir J. C. Bose's discoveries will be read with satisfaction by every Indian:

"Before Sir J. C. Bose invented and utilized these new instruments, in which the registration of extremely minute movements is made possible by reflected light beams it was generally supposed by physiologists (led by certain German speculators) that "water movement" lay at the basis of the response of plants to transmitted excitation. Now, however, the new methods of investigation are being pursued in German Universities and edition of his works are not only in preparation in Germany but in France. A practical side of these interesting researches is pointed out by Sir Jagadish. 'The discoveries in law of growth hold out great possibilities in increasing growth in plants on which the food supply of the world depend.'"

Control of Credit-Prices and Unemployment.

By A. S. Venkataraman, B.A.*

The International Association on Unemployment commends this book by Mr. Bellerby as a valuable contribution to the study of the relation between currency policy and employment, and as a stimulus to further research and fruitful effort along the lines of the subject treated. This was in 1923 and much water has flowed under the bridge since those days.

Briefly put, the argument runs thus. Unemployment will be reduced if industry can be stabilized at a comparatively high level of activity. Greater stability in industry can be secured by greater stability of the price-level. The movement of the price-level is determined largely by the volume of money or purchasing power made available to the community. Control over the expansion or contraction of the purchasing power rests partly with the banks. By assisting the expansion of this purchasing power at one moment they can facilitate a boom in prices; by contracting it, they can intensify depression. If they were in a position to regulate its issue in such a way as to minimize price fluctuations, they could thereby secure greater equilibrium in production, thus leading to a reduction in the average of unemployment. The most efficient method of restricting fluctuations is by raising or lowering the discount rate. But before adequate results could be obtained, not only national but international uniformity would seem essential. The practical issues centre on the problem of securing unity among banks for giving effect to whatever policy may seem in the best interests of industry and employment.

This publication was opportune in 1923 but to a large extent it has been rendered out of date by reason of the fact that with the resumption of the gold standard, the "Managed Currency" regime has ceased to exist. Independently of this, certain issues may be discussed. Leaving aside the doctrines of the *Managed Currency* such as the expensiveness and instability of gold, the regulation of the quantity of paper according to the volume of trade; the regulation of the volume of bank credit (circulating medium for the most part), the international Exchange rate being governed by the respective price-levels within 2 countries, price changes to be explained in terms of variations in the volume of money and bank credit, variations in the ups and downs of business being caused by variations in the volume of money and credit, apart from all these, the main point for consideration is, the choice before a country is between stability in its foreign exchange rates and stability in domestic prices and business. A country with a managed paper currency, cannot keep its exchange rates stable in relation to countries on the archaic gold basis, if it keeps its prices stable at home. It must, choose therefore, between internal stability and external stability.† The choice is for stable internal prices with fluctuating exchange rates. This school has been given the nick-name of "*Chiropractic*" Economics, by Mr. Anderson, of the Chase National Bank of New York. The redoubtable leader of the school is Mr. J. M. Keynes. Prices were high in 1919-20. The volume of credit and money had expanded; hence the conclusion that we were on a permanently higher level of prices. By proper regulation of money and credit, prices could be kept level and therefore unemployment reduced.

As a matter of fact, a sound theory of value rest in a study of human nature, of social psychology, of social organization, technique of markets, industrial processes, trade relations (international as well) as well as money and banking. Mr. Keynes argues, that while the Gold Standard makes for external stability, managed currency makes for internal stability. The two, however, are not antithetical. The foreign exchange rates affect all articles of international commerce. Adverse Foreign Exchange immediately raises the prices of import goods and raises the prices of export goods as well, especially in a country, where foreign trade is an important element in its total trade. Wide fluctuations in the Exchange rates bring about instability in internal price-levels as well. During the past 10 years, the market machinery did not work properly. A good working of the price system presupposes a sound money. If money fluctuates, exchange fluctuates and the mechanism is spoiled. The machinery works properly if a rise in prices is because of a rise in the value of goods. If, on the other hand, it is due to a shrinking value

* *Control of Credit, as a Remedy for Anemployment.* By J. R. Bellerby. (P. S. King & Son, Ltd., London.)

† *Cf.* "*The Gold Standard* Vs. *A Managed Currency.*" By B. M. Anderson (*Chase Economic Bulletin*). Reprinted in India by Mr. B. F. Madon of Bombay.

of money and a fall in exchange, a new situation arises. Dangerous speculation steps into the peaceful retreat occupied by Production. Far from consumption being discouraged by rising prices, extravagance is encouraged for fear that money will be worthless in the future. A country which adopts the policy outlined by Mr. Keynes, regulating its internal prices by raising the exchange rate, basing its exchange policy on a comparison of the price-levels at home and abroad, exposes itself to the danger of the rapid movement of capital between its money market and foreign money markets. Speculators then become the masters of the situation, tightening or relaxing the money market. With the resumption of the gold standard, the doctrines of the managed Currency School have ceased their hold on men's minds, if at one time, they were considered plausible and practicable.

Turning for a moment to the conditions in India, it has been claimed by the Government, that its policy was to secure comparative stability of the internal price-level rather than the stability of its exchange rate with Great Britain. The Finance Member (Sir Basil Blackett) observed "What the country wants as a whole is stability—stability first and foremost in internal prices and next in importance, stability in Exchange." "Had the Rupee been pegged down in relation to sterling or gold, the movements of world prices would have reacted upon the Indian price-level. This would have been more harmful to the interests of India than fluctuations in the Rupee Exchange." The Government fancy that prices have remained stable because the Index Number of wholesale prices has moved only in a narrow range but this stability has been a delusion. While the Index figure lends the appearance of stability, the individual fluctuations may be very wide indeed. The Index Number is not reliable as a figure of comparison with other countries because the articles used for index and their number vary widely. In both the United Kingdom and the United States, there are 3 or 4 different sets of Index Numbers by different authorities which on occasions disagree among themselves.

The following Index Numbers are taken from the *Indian Trade Journal:*

End of July 1914	.. 100	Average.
August 1923	.. 171	Average.
	Different Groups.	
Metals	..	.. 163
Sugar	..	.. 231
Tea	..	.. 211
Cotton	..	.. 239
Cotton manufactures	..	.. 261
Cereals	..	.. 114
Pulses	..	.. 112
Other Food Products	..	.. 222
Oil Seeds	..	.. 134
Oil Mustard	..	.. 92
Jute Raw	..	.. 73
Do Manufactured	..	.. 123
Other Textiles	..	.. 160
Hides and Skins	..	.. 125
Other Raw and Manufactured	..	.. 196
Teakwood	..	.. 119

Note.—1. The increase in sugar and cotton prices of 131 or 139% over pre-war owing to the forcing up of prices by foreign markets, Governments' control being very little.

2. Only 14% or 12% increase in cereals and pulses, which means low prices, low wages for the cultivator; poor prices in oil-seeds, jute and hides and skins.

Significance.—The agricultural population receives low prices for the bulk of its production. 87% of the cropped area gets poor prices. (All below the average.)

The *raison d' etre* of Government's interference would have been, when prices were high. That they were not (in 87% of cropped area, bulk of Production) is manifest from the Index figures. The only conclusion is that the cultivator (majority of the Population) gets only a wage very near pre-war and therefore is worse off, than other wage-earners. Hence, the claim that the Government by its exchange policy controlled prices, is untenable, much less that it tackled the problem of unemployment.

The Report of the Department of Industries, Madras, for the year ended the 31st March, 1924, states:—The question of organizing a Stores Purchase Agency for the various consuming departments of Government had been under the consideration of Government for some time and it was definitely decided during the year under review that the proposal should not be proceeded with, in view of the experience of another local Government in this direction. The department was asked, however, to report on the feasibility of drawing up for the information of heads of departments and other officers, who have purchases to make, a list of approved suppliers and of the articles which they can supply. The heads of departments were addressed on the subject and a list on the lines indicated by Government was prepared, although the final report was not submitted until after the close of the official year.

The Co-operative Movement.

The Governor of Bombay on January 12th opened the Ninth Conference of the Registrars of Co-operative Credit Societies in India, which held its sessions in the Sir Vithaldas Thackersey Memorial Hall. There was a large attendance of Registrars from different Provinces and the Indian States and also many prominent non-official co-operative workers from all over India. This Conference, which used to meet periodically from 1906 till 1918 at the headquarters of the Government of India, was revived this year and deliberations continued till the 15th instant under the Presidency of Mr. H. Calvert, Registrar of Co-operative Societies in the Punjab.

His Excellency the Governor, in his inaugural speech, extended a hearty welcome to the guests and expressed satisfaction at the splendid results achieved by the Co-operative movement during last twenty-one years in India in inculcating principles of thrift, self-help, mutual aid and practical training, by working its democratic constitution, which was not only improving the economic conditions of the masses but was raising the moral tone of the whole community. The Co-operative movement, His Excellency said, had stood a severe test during the war, and it was conclusively proved that the principles on which it was based were essentially sound and of great benefit to all countries, including India. While so many institutions went, during the war, into the melting pot, the Co-operative movement merged not only unscathed but stronger than ever.

His Excellency added that Bombay had been very fortunate from the very beginning in receiving active help and support from non-officials in carrying the gospel of co-operation to the masses, and he believed that in other provinces also non-officials were rendering similar help. The movement had now gone beyond the stage where it could depend only on Government, and if it was to be self-reliant many more prominent non-officials must come forward to play their part, as the more it depended upon itself for propaganda and organization, the greater would be its strength and stability.

Mr. H. Calvert, in the course of his presidential speech, said that the hope of the peasantry was bound up with the constitution of a little village association. The Raiffeisen type of societies had proved so successful in India that they could well see in it a message of hope, for if Germany, after fifty years' effort on co-operative lines, was able to break the power of the money-lender and gradually convert her societies from credit to thrift, there should be good reason to expect that similar efforts would in due time produce similar results in India, though the task here might be greater on account of special obstacles peculiar to the country and its social system, which would only be overcome by prolonged and persistent efforts. He declared the greatest enemies of the co-operative movement to-day were those who wished to force the pace and to advance without consolidating gains. The development of the movement must depend, he said, on the character of the people and on the ability and capacity of the leaders.

The great need of the country at this time was sound economic leadership. If they were to secure for the masses a higher standard of living, which was now deplorably low, it was necessary, he urged, that co-operative workers must become experts in rural economics, and they must search far and wide for ideas and suggestions that might lead to a solution. Their policy must be to educate the people to raise their own standard, not merely to read and write, but education in the positive directions of better cultivation, better animal husbandry, better buying and better selling, and also in those negative points, abstention from the money-lender, from unproductive borrowing, from waste and extravagance.

Without adult education of the right type this problem of low standard of living would remain insoluble. The general ideas prevalent in the country, the speaker continued, were essentially uneconomic. The prevailing customs and sentiments, some fortified by a religious feeling, made up a burden beyond their power to bear. It must, therefore, be freely recognized that the ideal for a better living could never be attained without something like a complete revolution in the general outlook. It was for co-operators to endeavour to ensure what type of scientific agriculture evolved by experts was suitable to the economic conditions of the villages, and their attempt should be to arouse the desire for better living, through better farming and better business, for a better life through greater efforts, and for a better India through self-help.

NINTH CONFERENCE OF REGISTRARS OF CO-OPERATIVE SOCIETIES, 1926.



Seated —(1) Sardar Bahadur Sardar Sardar Singh. (2) Sardar Salig Ram Hoon (3) Jay Gopal Asthana. (4) Hon. Mr. Maulvi Sayyad Mahmad Sadulla (*Minister*). 5) Hon. Sir T. N Sivagnanam Pillai, Kt., (*Minister*). (6) H. Calvert, C.I.E., I.C.S., *President*. (7) Lallubhai Samaldas, C.I.E. (8 F. H. Stevenson, I.C.S. (9 Md. Abdul Basid Khan. (10) Rai Bahadur S Venkata Reddy. (11) Hon. Pandit Sham Bihari Misra

1st Row — 1) K N. Subbaraya 2) Khan Bahadur Mohiuddin Ahmed. (3) Rai Bahadur K. L. Barua. (4) C. F. Strickland, I C.S. 5) K H. Ramayya. (6) S. Venkatesaiya. (7) G. K. Devdhar. 8) J. Gray, O.B E., I.C.S. (9 C. M. Trivedi, I.C.S. (10) Rai Saheb Govindarajan Mudaliar. (11 Rev J Z Hodge (12) Rao Bahadur M. K. Venkatacharya, B.A. (13) Khan Saheb Fazle Khan. (14) Bal Kisan. 15) Mumtazin Bahadur S. L. Tambe.

2nd Row (1) K S. Abdul Jalal Khan. (2) U. Maung Maung Gale. (3 J. A. Madan, I.C.S., (*Secretary*). (4) S. T. Dravid. (5) M Shiva Rao. (6) R. A. Gayatrinatha Aiyar. 7) K. P. Pande, M.A., LL.B (8) Rao Bahadur K. V. Brahma. (9) S. K. Lahiri.



Hassan—Mangalore Railway Project The Mysore Government have now ordered a re-survey of the line. Typical country through which the line would run.

Courtesy—*Madras Mail*

Middle Class Unemployment.

Debate in Indian Assembly.

Delhi, January 28th.—The Legislative Assembly resuming its sitting to-day, Mr. A. Rangaswami Iyengar moved the resolution regarding unemployment which stood in the name of Mr. Gangananda Sinha, recommending the appointment of a Committee with non-official majority, to investigate into the problem of unemployment among middle classes and to suggest remedies for the same.

Mr. Iyengar at the outset observed that the unemployment problem of the poor hinged on the general economic problem of the country which had been left unsolved by Government on whom lay the primary responsibility for solution. Huge poverty and semi-starvation was due to the economic policy of Government. This was a perpetual problem and so long as India did not get Swaraj there would be no solution to it. But meanwhile the middle class unemployment was becoming more and more acute. Some time ago the cry was that there was no employment for failed B.A.'s and failed Matriculates. But now the passed B.A.'s and passed M.A.'s could not get employment. Indeed there was a very large class of intellectual proletariat who could not get employment.

The problem could only be solved by Government realizing the existence of poverty. The late Mr. C. R. Das suggested a scheme of village reconstruction in order to increase production. But this did not meet with the support of the Bengal Government. Let the Government of India at least step in and face the problem and thereby relieve the lot of thousands of educated people in India.

Sir Sivaswami's Amendment.

Sir Sivaswami Iyer moved an amendment to the effect that the proposed Committee should investigate into the problem of unemployment among the educated classes of India and devise suitable remedies whether by a system of industrial and technical education or by revision of the existing system of education or by offering encouragement to starting of new industries or by opening new avenues of employment or by the establishment of bureau or by all these or any other means.

He opined that the cause of educated unemployment was largely due to lack of adjustment between the system of education and the means of industrial progress. The situation wanted not a profusion of sympathy from Government but a determination and earnestness. The want of touch between employers and standards and courses of educational institutions was one of the most serious points to be considered. Government should also consider the possibility of starting small industries which employed labour-saving machinery in substitution for manual labour. Fortunately, even among the most conservative classes objection to manual labour was now disappearing.

Enquiry for All Classes.

Mr. Sadiq Hussain moved another amendment so that the scope of enquiry should not be confined to middle classes but extend to all classes. He pointed out that there were millions of people who were starving and it was the duty of Government to come to their rescue and do something to alleviate their lot.

Moulvi Abdul Kasim did not believe in a Committee with a non-official majority, but he believed in a Committee of experts.

Sir Willoughby Carey said the problem of unemployment was very serious in the body politic and it was necessary that steps be taken to deal with it as soon as possible, but an All-India Committee would serve no purpose. What were needed were Provincial enquiries by local Committees. In Bengal Unemployment Committee had reported but due to some reasons, one of which was attitude of local Council, full facilities had not been forthcoming. The question, however, was fundamentally one of finance. The question of credit facilities and banking was important and he believed that report of external Capital Committee had an important bearing on the subject and should be studied carefully. The reason for unemployment was slump in economic conditions.

Mr. Sarfaraz Hussain Khan supported the resolution.

An Economic Problem.

Mr. Calvert, Official Member from the Punjab, said the problem was almost entirely economic. The resolution so far as he understood it was to find employment among candidates for superior posts. Taking all factors in India for every hundred persons employed there were three employed in superior posts, 26 as skilled workers and 71 unskilled workers. There was practically no employment in India at least not in the Punjab among skilled and unskilled

labourers to provide employment for men in superior posts.

Mr. Calvert said that opportunities for employment in this country were absolutely without limit. There was unlimited scope for small industries but difficulty was that boys wanted employment from others and did not themselves take to enterprise and create employment by investment in the Punjab industries as dairying, cattle-breeding, ghee; flour mills were springing up but college boys were not employed in them. Mr. Calvert also held that one solution was improvement of agriculture which would provide raw material for industries and increasing wealth of agriculturists who in turn would provide market for products of Industries. The final deed was confidence among industrial public.

Mr. Mang Tok Kyi was in favour of Sir Sivaswami Iyer's resolution. Cry in Burma against non-Burmans, he said, was because of unemployment among educated Burmans whom the Government of India's offices in Burma such as customs, railways and accounts, did not engage.

UNEMPLOYMENT AND UNSKILLED LABOUR.

Mr. Chamanlal supported Sir Sivaswami's proposition as amended by Mr. Sadiq Hussain. He denied Mr. Calvert's statement that there was no employment among unskilled labourers. Thousands of railway men were out of employment. An enquiry should, therefore, be widened to include educated classes as well as workmen. The present system of education was creating slaves and Baboos and he warned it was manufacturing criminals as well, for men who had not morsel to eat might become murderers. There was a lack of balance in society as based on present capitalistic system.

Mr. Hussanally was in favour of remedying unemployment and thought provincial ministers be left to tackle the question.

LALA LAJPAT RAI.

Lala Lajpat Rai said that the question of unemployment was not confined to one or two provinces but was felt throughout India and must be, therefore, dealt with as such by the Central Government. The Government must recognize that their duty did not end by providing for defence and for maintenance of law and order. It consisted also in seeing that the people prospered every day. The prosperity of the people should not be judged by figures collected by a few persons in Government offices but by the actual condition of the people which was known by their leaders and not by the officials who live in bungalows and drawing rooms. Practically all classes suffered from unemployment due to Foreign Government. The fiscal policy of the Government and Sales of Reverse Council had, for instance, created unemployment among the traders. The speaker felt disappointed at the speech of Mr. Calvert. It showed that no foreign bureaucrat, however well intentioned, could understand the real economic condition of the people. Mr. Calvert did not realize that if educated men took to industry of manufacturing iron Persian wheels they would thereby displace pot industry in villages. Mr. Calvert had spoken of hoarded wealth but did he realize that large reserves at the disposal of Government put in the Imperial Bank were mostly employed by foreign trader and did not help small indigenous industries.

ENQUIRY URGED.

Mr. Joshi supported Mr. Sadiq Hussain's amendment for enquiry into unemployment of all classes. It was, he said, wrong to deal with unemployment of the educated classes and of the industrial workers separately. He pleaded for starting of unemployment insurance for all classes and workmen in particular. Concluding, he suggested the spread of technical education

CASE OF MADRAS.

Rev. Macphail said the result of education in the Madras Presidency at any rate had been to attract young men to law courts and to Government offices In the interest of education as a whole he wanted that the Assembly should dissociate Universities from the idea that instead of places of learning there should be avenues for Government employment.

Mr. B. C. Pall opposed Mr. Sadiq Hussain's and Lala Lajpat Rai's amendment and supported the original resolution.

Sir B. N. Mittra said he himself had taken some part in relieving middle class unemployment some time ago, and even now he was receiving a large number of letters every day appealing for appointments. He, therefore, understood the situation. Now he could not do so much, and probably those who wrote to him in vain must now be thinking that as he had risen up in the official ladder he had become a hard-hearted bureaucrat. That, however, was not the case, knowing the position fully as he did, what was he to do with the middle class educated man ?

There were also resolutions passed in the Madras and U. P. Legislative Councils on this question. The Industrial Commission's recommendation could not be given effect to by the Central Government as industries became

a transferred subject, but Local Governments had taken, and were taking steps in the matter. The Government of India had, however, gradually developed the Stores Department and had considerably modified the rules of the department for the purchase of articles as far as possible in India, and a further modification of the rules on this subject was under consideration. The Skeen Committee was enquiring into the matter of appointing Indians as officers in the Army and the Government of India had been adopting a more vigorous policy in regard to the development of railways. The policy of Indianization of the services had been accepted on the lines as generally recommended by the Lee Commission, and there would thus be more avenues for educated men. The Government of India had granted remissions in provincial contributions, which would enable Local Government to proceed with their development schemes, which would in turn give employment for some of the present unemployed. The Economic Enquiry Committee's report had been sent to Local Governments whose co-operation was necessary. More than all there would be a Royal Commission of Agriculture, which might recommend schemes of agricultural development, and this might enable them to provide appointments for educated men. Now it was for the leaders in provinces to take steps to secure the solution of the problem of educated unemployment.

UNEDUCATED UNEMPLOYMENT.

In regard to uneducated unemployment Sir B. N. Mitra said Provincial Governments had not been unmindful of their obligations in this matter. Some Local Governments have investigated the matter, and if the Local Governments thought that a stage had arrived when there must be a central enquiry, then Government of India would not hesitate to act upon the suggestion. But at present the appointment of a Committee as suggested would be only futile.

Sir B. N. Mitra, therefore, suggested to the Assembly to leave the whole position where it was. If the Assembly still passed the resolution, the only action the Government of India would take would be to draw the attention of Local Governments to it. The amendment of Lala Lajpat Rai was to the effect that the proposed Committee with a non-official majority should investigate into the problem of unemployment in general, and among educated classes in particular, and devise suitable remedies whether by system of industrial and technical education or by offering encouragement to the starting of new industries, or by opening new avenues of employment.

This amendment was put to vote and carried by 48 against 46.

Economics in the West.

Indian Cotton Excise.

London.—It would be expecting too much of human nature to suppose that the Lancashire cotton industry, so hard hit in these days of trade depression, will share in all respects the gratification of opinion in India that the excise duty has ceased to be. In recent years Lancashire has been faced with a 7½ per cent excess of import duty over the excise charge: now she has to meet the full 11 per cent duty, which, though not imposed for protective purposes, cannot fail to have some protective effect. The outlook would have been different if the abolition had been accompanied by a preferential arrangement, giving Lancashire opportunity to hold her own against Japanese competition which is aided by sweated labour. But India, which now has virtual control of her own fiscal policy when the Government of India and the Legislature are in agreement, is in no mood to make a preferential arrangement a condition of getting rid of the excise duty. The Indian view has been that "the slate must be cleaned" before other readjustments could be considered with an open mind. The decision reached by the Federation of Master Cotton Spinners' Association and the Manchester Chamber of Commerce in the considered statement issued recently shows a sympathetic understanding of the Indian point of view, and a recognition that the disappearance of an import so strongly and persistently resented in India is calculated to foster between Indian and Lancashire textile interests "a better spirit of mutual sympathy, support, and accommodation". In such an atmosphere the question of reducing the import duty on Lancashire textiles, suggested in the statement, can be examined dispassionately. So writes the *Times* in characteristic fashion: It is a bid for Imperial preference!

German Electric Supply Industry.

The German electrical industry shows signs of great activity and progress. Since the rationing of current became unnecessary, and since the mark was stabilized, the demand for electricity for private, public, and industrial purposes has grown enormously. In 1924 the increase in consumption varied from 10 per cent to 25 per cent; but during the current year there has been an average increase of 50 per cent as compared with the previous year. This increase, however, has not been accompanied by a parallel rise in earnings, because there have been repeated and large reductions made in the charges for current.

Many stations at present are likely to be seriously inconvenienced by the demands placed on them during the coming winter months, as only a few have been able to extend their facilities sufficiently to meet such extra pressure. It is feared that a system of rationing will have to be introduced in certain districts. Several towns have had recourse to foreign loans in order to obtain the necessary funds for extensions and for modernizing their plant, but even this assistance will have little effect on the situation this winter. It is estimated that the next few years will necessitate the duplication or triplication of the present capacity of electric supply.

As in almost all other German industries the whole tendency of development is towards centralization in fewer and larger stations. The powerful and efficient "overland" stations are absorbing a large number of small communal power stations which are either inefficient or financially weak. Further developments have taken place in the utilization of water power whilst the steam-generating stations have largely taken to the use of lignite or brown-coal. Whereas in 1913, 70 per cent of steam-generated electric current was produced from coal, the percentage had fallen to 40 in 1924. Of course, the actual current generated in 1924 had increased. The 70 per cent referred to for 1913 corresponded to 2,800,000,000 kw. hours, while the 40 per cent in 1924 represented 4,600,000,000 kw. hours. It is not thought that this tendency to use lignite will be permanent, but that technical improvements will lead to a return to coal.

The charges for electricity, as already stated, have been repeatedly reduced and are now in certain areas below pre-war prices. On the other hand, the cost of production is about the same as it was before the war and in many cases considerably higher. Consequently the big users are obtaining power in many cases at prices that leave no margin for profit whilst the small user is mulcted to make good the deficiency.

The total capacity of the plants installed in the German electric stations amounted in 1924 to 5,350,000 kw. This was divided up as follows: 725,000 kw. from water; 1,830,000 kw. from lignite, and 2 530,000 kw. from coal. At the end of 1924 there were 2 068 private and 1,094 municipal or State-owned power stations. The number of townships supplied was 55,700. In 1913 there were in Germany 13 large power stations with a capacity of 20,000 kw. or more. This number had increased four years later to 39 stations and at the present time there are 80 such large stations.

Sisal in Portuguese East Africa.

Sisal fibre production is at the moment a subject of considerable interest within the tropical limits of the British Empire. The reasons are not difficult to find, for the industry appears to be highly profitable, and the agriculture is simple owing to the fact that the plant will grow anywhere and is practically unaffected by disease or enemies. These same desirable conditions have attracted the attention of planters and small capitalists for nearly 20 years, but with very varying degrees of success, the causes of which are worth the investigation of those recently interested in the subject.

The economical culture of sisal is not as simple as it appears because the amount of fibre contained in the leaves varies to an extent that will make the difference between large profits and large losses. The exact conditions affecting the fibre content are not known, although if the subject had been scientifically studied in the past full knowledge would by now be available. Meteorology plays a very important part, and a limited period of drought appears to be essential for sufficient fibre content, and likewise a relatively poor soil, although not poor enough to delay the growth of the plant. The system and methods of cultivation also appear to play an important part, and there is no doubt that plant selection is of considerable consequence.

East Africa appears to have proved itself far superior for economical production to the original home of the industry (Mexico), and it was first introduced there in 1893 by Dr. Richard Hindorf. The Germans rapidly took up its cultivation, and by 1914 had over 20 years' experience of its economics, as against

not more than seven years by British planters. During the war little experience was gained, as many of the planters were fighting and the high price of sisal did not make for a study of cheap production. Even when the agriculture is carried out with good results failure is still possible, and in fact common, because it has not been sufficiently realized that expert engineering conditions are of great importance. The plant and machinery required for sisal production absorb a large part of the capital necessary, and unless reasonably exact estimates and plans can be made before planting even commences it is not unlikely that serious mistakes may have been made which add both to the capital and production costs and make the difference between success and failure. Lastly, sound financial methods are essential The costs of production must include a continuous programme of expensive re-planting, and owing to the large amount of plant and machinery used and the rough usage it receives, a heavy charge for depreciation must be made. Obviously, in any undertaking requiring much machinery and plant, the scale of operations is a weighty factor. In this respect the Dutch producers in Java appear to have gone far ahead of other areas, and their factories are on a scale unheard of in East Africa.

In Portuguese East Africa much of the agriculture is performed by large land companies, and the attempts at sisal production have been undertaken on a comparatively large scale. The industry started only about 1910, and has therefore had insufficient time to be thoroughly tested, but there certainly appears to be a serious intention substantially to develop sisal production. There is much British capital invested in these land companies—for instance, the Mozambique Company and the Zambesia Compania. Recently interest has been taken in sisal production in Portuguese Nyasaland, which lies between the sea and Lake Nyasa, with its northern border against Tanganyika Territory. It is chartered to a Portuguese company largely financed with English capital. British effort in East and Central Africa (except for well proved mineral areas) has concentrated in British administered areas, and it has been the same with German capital. As interests widened they naturally spread to well-known rather than unknown districts. Portuguese Nyasaland possesses a very few limited areas which are ideal for large-scale sisal production. English and German companies have started operating there since the war.

Books in 1925.

A total of 13,202 books is recorded by the *Publishers' Circular* as having been published during the past twelve months. This is an increase of 496 over the total for 1924

	1924	1925
New Books	8,024	8,520
Translations	321	307
Pamphlets	1,168	1,150
Total New Books	9,513	9,977
New Editions	3,193	3,225
Total ..	12,706	13,202

The totals for the years since 1913 (the pre-war record year) are also of considerable interest :—

Year.	New Books.	New Editions.	Total
1913	9,541	2,838	12,379
1914	8,863	2,674	11,537
1915	8,499	2,166	10,665
1916	7,537	1,612	9,149
1917	6,606	1,525	8,131
1918	6,750	966	7,716
1919	7,327	1,295	8,622
1920	8,738	2,266	11,004
1921	8,757	2,269	11,026
1922	8,754	2,088	10,842
1923	9,246	3,028	12,274
1924	9,513	3,193	12,706
1925	9,977	3,225	13,202

The following list shows the total number of publications in each class for 1925 and 1924 :—

	Totals for 1925.	Totals for 1924.
Philosophy	288	317
Religion	981	956
Sociology	932	920
Law	318	230
Education	247	233
Military and Naval	262	188
Philology	263	203
Science	617	585
Technology	609	586
Medicine, Public Health, etc. ..	399	388
Agriculture, Gardening ..	208	162
Domestic Arts	85	50
Business	150	134
Fine Arts	281	325
Music (Works about)	129	131
Games, Sports, etc.	222	220
Literature	553	525
Poetry and Drama	794	810
Fiction	2,769	2,801
Juvenile	1,124	1,016
History	499	468
Description and Travel ..	578	574
Geography	91	97
Biography	632	577
General Works	171	220
Total	13,202	12,706

Co-operation in Industry.

Mr. W. Howard Hazell, Director of Messrs. Hazell, Watson and Viney, Ltd., Printers, of London and Aylesbury, and President of the Federation of Master Printers of Great Britain and Ireland, recently wrote to the editor of *The Times* as follows:—Some of your correspondents have referred to the desire of labour to share in the profits of industry and to have some measure of control. It is therefore, worth considering what has been done by one of our important industries to promote profit-sharing and share-purchase by employees. The Federation of Master Printers appointed a committee a few months ago to examine schemes of profit-sharing and share-purchase suitable for the industry. Their report deals with the subject fully, and explains various methods which have been in existence in the industry for many years. Although the report has been prepared by and for the printing trade, the methods suggested are suitable for any industry or business. One method is, that when the dividend on the Ordinary capital is above an agreed minimum, for each 1 per cent declared above that amount 1 per cent or some other agreed percentage on their total wages in the financial year shall be paid to the employees. Thus, if 6 per cent be the minimum dividend, and 10 per cent be declared on the Ordinary capital, the workers would receive 4 per cent (or some other fixed percentage) on their earnings for that year. A second scheme suggested was, after reserving the minimum dividend, to distribute an agreed fraction of the balance of the profits to the workers as a percentage on their earnings. Both schemes have proved successful, and would, with modification, be suitable for any business or industry. The profits thus paid to the workers must be in addition to, and not in lieu of, fair wages. A working man lives by the week and cannot wait until the end of the year for part of his wages. His share of profits must be a bonus over and above a fair rate of wages. Any scheme for offering shares to employees should be in accordance with a working man's habits and outlook, and the following method, which has been very successful in the last twenty-five years, meets this difficulty, and is suitable for a company whose shares normally stand at a premium. A special class of employers' Ordinary shares should be created, which can only be issued to the employees at par. The shares can be purchased for cash or by small weekly instalments. When a holder wishes to sell he can, and when he ceases to be employed by the company he must offer his shares to the directors, who find another employee willing to purchase at par. If no employee be willing to purchase at par the holder can sell at any price to whom he pleases, but all subsequent holders when selling must offer the shares at par to the directors, so that ultimately the shares will return to the employees for whose benefit they were created. This scheme encourages the invaluable qualities of thrift and self-reliance, and gives to the holder all the dividends and rights of an Ordinary shareholder (except a restriction on the rights of sale) on very favourable terms. The need of the present day, is to increase the efficiency of our industries and to allay unrest. If a profit-sharing or share-purchase scheme be successful, it must increase efficiency, as the workers know that higher outputs or any economies they can make will help to swell the profits in which they share. Unrest will be lessened when the workers realize that high profits are shared between capital and labour. Profit-sharing and share-holding by employees are not a panacea for all our industrial ills, but they are suggested as a means of bridging the gap which too often separates capital and labour.

Water Power Exhibition at Basel.

According to the *Times Trade and Engineering Supplement*, the arrangements for the International Exhibition of Inland Navigation and Water Power which will take place at Basel from July 1st to September 15th next, are proceeding actively. Nearly all the big Swiss manufacturers, as well as the Federal Railways Department, have agreed to participate. Amongst foreign countries, Belgium, Germany, France, Holland, Italy, Yugoslavia, Austria, and Czechoslovakia are also making a display. Negotiations are being carried on with Canada, Great Britain, Norway, Sweden, Hungary, and the United States with a view to obtaining their support. In France the Government has appointed a special Committee for this exhibition. France, Germany, Holland and Italy have all taken space for a display by their respective Governments and private firms. The World Power Conference will hold a special meeting during the course of the exhibition. International discussions will be arranged on such subjects as the use of electricity in agriculture, railway electrification, inland navigation and the utilization of water power, and international exchange of power.

Canadian Trade and Finance.

Some Aspects of Recent Economic Progress.

Montreal, January 6th. 1926.—The future holds prospects of better times not only for Canada, but in Europe and in the world as a whole. It is only slowly that we are coming to the realization of the rapidity of recent economic progress. It is a far cry back to the old economics which functioned only as a means of explaining why there was so much misery in the world and in proving that the necessary shortage of production was an inevitable cause for the starvation of a large proportion of humanity. In the few years just prior to the great war, civilized countries increased production rapidly and the ever growing momentum of industrial progress outstripped all theory. Prosperity became common rather than exceptional, and the rising standard of living was recognized as the natural product of a capitalistic society in an industrial age. The wholesale destruction of life and prosperity during the war, led many to believe that generations of retrenchment would be required before we would again achieve the pre-war standard of living. During the war, however, productive processes were speeded to a point beyond previous belief and to-day we are once more on the verge of a period when our problems will be those of overproduction rather than those of the old days of social deficit. This new fear of overproduction has taken the place of the old fear of deficit and this new fear will continue to hold sway until the world has solved the problems involved in financing steadily increasing consumption and continuous improvement in standards of living.

In a very real sense the resolution of the American Bankers' Association this fall, appropriating funds for economic research with the aim of abolishing poverty and permanently wiping out unemployment, marks the beginning of a new epoch. In this age we must cease to consider such efforts as Utopian, and begin to look forward to the accomplishment of such results as the natural product of the workings of our capitalistic organization of society, and realize that only under an organization which gives large individual rewards for individual initiative, could such progress be achieved. These constant improvements in the standard of living throughout society constitute a conclusive answer to socialism and bolshevism. Under no other organization of society has the general standard of living been so high. The improvements which are taking place from within, constitute the best proof of the adaptability of our present organization to new conditions.

The active interest of industrial, commercial and financial leaders in the scientific solution of these problems is a most promising development. Economic changes as far reaching as this industrializing process, involve changes in social structure that are well worth the most careful and intelligent study. All too often in the past, such theorizing has been left to the reformer and the politician who have merely suggested some legislative panacea. Government administration involves an expensive bureaucratic control, expensive to administer and ineffective so far as permanent solutions are concerned. From this viewpoint, then, the work of Hoover, in securing industrial co-operation is doubly significant, for his work has not only been done without the passage of mandatory legislation, but with the full co-operation of the most representative manufacturers and engineers in many lines. In this process, the contributions by universities and foundations for economic research are becoming increasingly important and the co-operation of industry becomes more enthusiastic as this co-operation produces more measurable results. The interest which such leadership has centered around the various industrial trade cycles, is already tending towards measures which are mitigating the severity of these cycles. With the general realization of the vast waste involved in the rise and fall of business activity, has come more highly co-ordinated effort toward reducing this fluctuation. Those manufacturing plants which have heavy seasonal production are more active in producing standard products during "off season" periods. Manufacturers and retailers are aiding transportation companies by adjusting their orders to periods when traffic is less heavy. In the power industry, there is a tendency toward greater efficiency through the processes of securing more balanced loads. Financial leaders are attempting to secure greater stability through a return to the gold basis, in order that fluctuations of exchange may be a smaller element in business uncertainty. So long as each industry looked only to internal problems, there was little attempt

to co-ordinate improvement, but research has done much to emphasize the necessity for harmony between industries.

Research is doing much to secure productive results along the line of simplification and standardization of materials, equipment and products. While the Canadian market is as yet too limited for many types of large-scale production, yet there are great gains possible in this direction through the elimination of non-essential varieties of products. Standardized and interchangeable parts represent a saving to both the producer and consumer, and recent investigations show that this process has yet been carried far enough. In treating this subject of Simplification, the monthly letter of Parclay's Bank says :

Simplification and Standardization.—"There is still another factor in the present money situation which seems to have passed almost unobserved, yet which deserves special mention at the present time, namely, the cumulative benefits flowing from the establishment of the Division of Simplified Practice in the United States Department of Commerce, nearly four years ago. The folly of manufacturing sixty-six varieties of paving brick when only five are actually necessary to meet all demands, needs no demonstration. By force of inertia, however, the situation would doubtless have endured indefinitely in the absence of some agency whereby producers, distributors and users could come together and agree to minimize the excess varieties in shape, size, quality, process, composition and other characteristics of many products. Thus, the styles of woven-wire fencing have been reduced from 552 to 69. Where 78 sizes of bedsteads, springs and mattresses were formerly manufactured, only four are now turned out. Bolts and nuts for farm machinery have been reduced from 1,500 varieties to only 840. Hotel chinaware has declined similarly from 700 to only 160 kinds. Nine types of milk bottles now do the work of 49. House-builders are content with 24 different kinds of metal lath as against 125 formerly. Several other items used in building construction have been simplified to the gain of all concerned. The lumber industry has thus taught itself to economize nearly $200,000,000 annually. The good work is going on steadily in a widening circle of industries. Automotive parts, boilers, boxes, concrete blocks, dental supplies, furnace parts, grocery bags, tanks, oil burners, pocket knives, wooden tool handles, hardware in scores of different groups, steel lockers, rubber heels, cotton fabric colours, invoice and other office forms—these are a few of our domestic lines where highly practical innovations have been made in the direction of greater simplicity. But the end is still far away. To quote the author of the movement: 'There is a great area, still untouched, in which the application of these waste-eliminatnig measures may well save not millions but billions.' "

Perhaps the most difficult, immediate problem before economists, management and labour, is the one involved in the financing of increasing consumption. Increase in production, of course, tends to lower price : lowered price presents difficulties for the manufacturer and, in spite of increased consumption, usually results in depression and a return to something like the old scale of production. Increasing must eventually take place in such a manner as to steadily raise standards of living without producing long periods of severe depressions. The world can make use of all that the world can produce : Canada needs Canadian products and the world can use our surplus, but there are still important, unsolved problems connected with the increase of their consumption.

Inter-Relationship between Economic and Social Structure.

One aspect of the complexity of modern, economic life is the close relationship between the problem of ownership and the problem involved in the modern idea of the family. The decreasing size of the family unit is producing economic consequences which are only now beginning to be recognized. No longer does the single household contain the grandparents, the parents and the younger workers. Decreasing mortality rates produce an ever-increasing proportion of old people who are unable to find positions which will enable them to support themselves entirely from immediate earnings. Modern medical science is prolonging life, industrial operations are carried on at a speed demanding youth, and interesting economic adjustments are taking place, which supply the needs of age from the general social income, rather than from the immediate earnings of the children. Yet few people realize the close relationship between this problem and the problem involved in large-scale financing.

Among the outstanding examples of the process of financial adjustment which is aiding society to meet this change in the family unit, we might mention the great increases in the volume of savings, the tremendous volume of endowment insurance, and both nationwide and private company "old age pension" plans. But the movement is of such major importance that these developments take care of only a limited proportion of the individuals concerned. The greatest development has been in the direction of making all members of our capitalistic society capitalists, customer ownership, the employee ownership movement, the floating of $100 and $500 bond issues, are all steps in the recognition of the fact that the whole public may become an investing public. The great progress that is being made toward encouraging widespread and public ownership of industry, is just as significant an economic change adopting society to this new family

relationship, as is the decreased size of the individual house and the widespread development of hotel and apartment life. There can be no disturbing bolshevists in a society where all members feel that it is to their interests to support the existing social order, and where there is no longer any group of whom the word "proletariat" is descriptive. Yet the outstanding factor in this situation is the steadily increasing necessity for securing widespread public confidence in the financial structure which, on the one hand, permits large-scale production, and on the other hand, supplies the needs of the increasing group of non-producers.

THE FINANCIAL STRUCTURE.

From the viewpoint of finance and industry, widespread ownership of the corporation constitutes the most interesting of recent economic developments. There are many old problems of social responsibility and absentee ownership which appear in a new guise in this form of financial organization. So long as the corporation was owned by a few well-informed individuals who bought and sold their shares within their own groups of friends and intimates, there was little general interest in the company or in the stock exchange where these transactions took place. But to-day, as the general public enters upon the ownership of industry, many of these relationships are undergoing rapid change. Formerly, the corporation director was elected to protect the interests of his friends; to-day, he stands in a position of responsibility toward the whole investing public who own, or may own shares in the company. The stock exchange has been a public market in which transactions that take place are of widespread interest and importance. The speculator has broadened his function until he now acts as a middleman of securities, regulating supply and performing a true economic function, so long as he stabilizes prices and prevents securities from selling at prices higher or lower than are justified by their yield and security. When he buys securities in the belief that their true value is higher than the market price, the speculator furnishes a market to those who desire to sell, and when he sells stock short, he prevents temporary shortage from carrying prices higher than conditions justify. Whether this function is performed by the individual or by the pool, the operation constitutes a useful market function, such, in short, is our present theory of the economic functions of the speculators in the security markets of the world.

With increased recognition of the necessity for better balance between production and consumption in the major commodity markets is aiding in establishing an increased stability in rather marked contrast with the lack of concerted effort in the same direction in the security market. It is quite evident that great benefit would ensure to the business and financial structure from measures of credit control calculated to prevent the too wide swings in security prices with their attendant evils.

Because changes in price level of securities increase the volume of business on the exchange, the whole financial organization surrounding the exchange is under severe temptation to disseminate rumours which will encourage changes in the prices of securities. Daily papers contain frequent reference to the formation of new pools, whose purpose it is to control and manipulate stock prices. While the activity of pools which function in a true speculative capacity is not under question, yet the circulation of false rumours injuring the value of stock, or the releasing of good news after the pool has bought from less intimately informed investors, and other destructive and injurious operations of this character result in the loss of earned savings and undermine the confidence of the investing public.

When a company lists its securities on the exchanges of the world it is asking for financial assistance from the investing public. If the financial and industrial world wishes to retain the full confidence of this public it must come to recognize the rights of the individual investor. Semi-annual or quarterly reports may be issued with the idea of giving the public enlightening information as to the real status of the company. It is a matter of fraud when directors take actions that deliberately bring losses to the company of which they are directors and the time must soon come when there is full recognition of the fact that the interests of the investor are not fully protected unless he receives full, accurate information with regard to the value of his holdings. Already there is general effort toward greater industrial harmony through the industrial and customer ownership movements. The effort of tomorrow must be toward giving all the public an individual interest in supporting the general social order. The increasing economic surplus must be so widely distributed that all society shall be interested in preserving our present social order.

It is evident to financers that there is greater difficulty in this problem of disseminating accurate information than the general public may realize. Who can tell just how the release of information will effect the market. There may be doubts in the minds of management both as to the extent by which the company will benefit and as to how much change such news should make in the value of the securities. The directors may be quite confident that the company will be only temporarily inconvenienced by an unfortunate happening or they may judge that what seems like good news may have very little real effect upon the value of the stock. When well informed men have difficulty in evaluating information, they may well feel that the general investing public will make serious mistakes in determining the effect of their information upon the value of the security. Yet it is evident that the public demand for accurate information will not be satisfied by the old dictum that the stock-holders have elected certain responsible directors and that they must be content with whatever information and action these directors deem wise. The problems which are developing from this wider general interest in the security market seem most difficult but there is no off-hand panacea to remedy the situation.

To-day the world is economically disorganized and far-sighted leaders are doing their utmost to restore social stability and financial confidence. To wait for the Government to take action demanding reforms may be disastrous. This is a matter which may be taken up from within and increased public confidence gained through a voluntary recognition by big business of its duty in the direction of greater responsibility towards investors. The American Telegraph and Telephone Company and the United States Steel Corporation are among the leaders in this movement toward furnishing the public with the maximum information possible concerning conditions. It would be well for this movement to be intelligent and come from within, and not for it to be foisted upon the financial structure through legislative action.

It is evident that the stock exchange is destined to become increasingly important as a public investment exchange. The recent activities of the New York Stock Exchange in developing machinery to aid in the detection of stock swindling, constitutes a recognition of the responsibility of the directors to the general investing public; but the steady pressure which they are exerting toward wider disseminations of accurate information and their demand for quarterly reports, constitutes a far more important step in this same direction. This recognition of responsibility is a most hopeful sign for finance management, and industry must steadily raise their standards if full public confidence in the capitalistic organization of society is to be maintained.

British Industries Fair.

The British Industries Fair, the largest annual trade fair in the world, is to be held simultaneously at London and Birmingham from 15th to 26th February, 1926. Different groups of trades will be shown in each city. This is not to be confused with the British Empire Exhibition, now closed. It is a buyers' Fair, and is organized by the British Government Department of Overseas Trade and the Birmingham Chamber of Commerce. Practically all the important industries will be represented.

Invitations to the Fair have been sent to 150,000 buyers in various parts of the world. Candaian manufacturers will exhibit in a special section, which is being organized by the Canadian Chamber of Commerce in London. In past years, buyers from all parts of the world have attended the Fair. It is anticipated that many Canadian buyers will attend as usual.

The clothing and allied trades will exhibit for the first time. This is essentially a trade fair, but in response to the request of the majority of exhibitors, the public will be admitted during certain restricted hours. It surpasses in size and diversity of products, all the Continental trade Fairs. Information required by intending exhibitors or buyers can be secured from the four British Government Trade Commissioners in Canada, at Montreal, Toronto, Winnipeg and Vancouver.

Two conditions, before India can pull her weight in the Empire's naval effort, are stipulated by *The Daily Chronicle*. which, in a leader, draws attention to the problem of India's naval defence and points out that India must become richer and her system of Government internally and externally must get Indian public opinion in new and positive sense behind it. Only in proportion as we make actual great and potential resources of the country can further money be spared for the defence from development and only in so far as her membership of Empire becomes a free-will membership, can she be brought to realize that Empire's naval defence includes her own.

Topics in the Journals.

The Central Cattle Bureau.

The *Agricultural Journal for India* for November 1925, has an interesting Editorial on the above subject.

"The position of the cattle-breeding industry", says the Editor, "has in this country received considerable attention within recent years. The Imperial and Provincial Departments of Agriculture, as well as some of the more advanced Indian States, have drawn up schemes of improvement based on the assumption that there are too many scrub half-starved cattle in the country, and that what is wanted is an improvement in the quality of our live-stock. Improvement can be effected, it is believed, by selective breeding, cross-breeding and better feeding. The different breeds and methods of feeding in vogue in different localities are, therefore, being studied and pure-bred herds established. A foundation is thus being laid whereon the cattle industry in this country, both as regards draught and milk, will, in course of time, we hope, be firmly established.

The corner-stone of the foundation required is a knowledge of the qualities of the breeds which we possess. Given this knowledge, it is possible to build up herds of pure-bred pedigreed cattle possessing the characteristics required to meet the economic needs of India. In most parts of India a dual-purpose breed should prove the most economical, and to the improvement of such breeds much attention is, therefore, being paid on many of our Government cattle-breeding farms.

The subject of cattle-breeding has been repeatedly discussed by the Board of Agriculture, and the policy recommended by that Board with respect to cattle improvement is gradually being given effect to. The Imperial Department of Agriculture has appointed a Dairy Expert and Physiological Chemist and established an Institute of Animal Husbandry and Dairying. It has started cattle-breeding operations at Karnal, and is studying various breeding and dairy problems both at that farm and at Bangalore and Wellington. Nor have the provinces and Indian States been idle. Some of them have appointed special officers for animal husbandry and dairying, as recommended by the Board of Agriculture, and are concentrating on the improvement of their best local breeds. Cattle-breeding, in short, is receiving ever-increasing attention, and the importance of the industry and the scope for its improvement in this country, where milk is a staple article of diet, and where the bullock as the motive power is in general use on the farm, are beginning to be realized as never before. To foster this new interest, and to guide it, should be one of the functions of Agricultural Departments.

With a view to stimulating and to some extent co-ordinating the efforts being made towards cattle improvement on farms controlled by the Imperial and Provincial Departments of Agriculture, Indian States and private individuals, the Government of India have decided to give effect to the recommendations made by the Board of Agriculture in 1924 and to establish a Central Bureau of Animal Husbandry. The control of this Bureau will be vested in the Imperial Dairy Expert and its headquarters will be his office. The main duties of this Bureau, to commence with, will be :—

(1) To collect and disseminate information concerning cattle-breeding and allied subjects.

(2) To assist in the disposal of surplus pedigreed stock available on Government cattle-breeding farms.

(3) To standardize breeding records and methods of milk recording.

(4) To maintain general herd books of breeds, or of milch cattle as distinct from specific breeds found in more than one province or State.

(5) To encourage the use of pedigreed stock.

(6) To keep the officers in charge of cattle-breeding in provinces and Indian States in touch with each other.

Breed records should be maintained by an All-India authority as herds of the same breed are found in different provinces and Indian States. There is, for example, a number of herds of Sindhi cattle good enough to be registered in a herd book, in Sind, Mysore, the United Provinces, Bengal, Burma, Madras, the Central Indian States, the Punjab, Travancore and Baluchistan; and no Cattle Board having jurisdiction in one of these provinces or States only could conveniently keep the necessary records for all these Sindhi herds. To avoid complications, it is very necessary that a serial number should be given from the very beginning for each animal registered, and that this number should not in future years be duplicated. In the case of a milch breed in particular, the actual recording of the milk yields of each animal and the progeny thereof over the whole country should be done by a central authority which is in a position to certify as to the correctness of the yields of the animals recorded.

In parts of Europe such records are kept by breed societies subsidized by Government in most cases. In the United States, Canada, England, Scotland and Ireland, milk records are certified by special societies subsidized by the Governments concerned. Those societies are formed and largely controlled by Milking-breed Societies.

India will never take the place which she ought to take, as the premier breeder of the tropical draught and milch cattle, until she has correct breed records for the best types of each breed. As the people of this country interested in cattle-breeding are not yet sufficiently educated or public-spirited to form and work breed societies which would give reliable pedigree and milch and draught record certificates, such records will, for the present at least, have to be maintained by a central department of Government. The Government of India hope that Agricultural Departments as well as private individuals interested in the cattle industry in this country, will co-operate with the Imperial Dairy Expert in his efforts to make the Central Cattle Bureau of real value, and to lay the foundation of an organization which may one day provide accurate information with respect to the good qualities of Indian cattle—the finest in the world for tropical climates."

Agricultural Co-operation in Poland.

Messrs. Zygmunt Chmielewaski and Wladyslaw Wilczewski write to the *International Review of Agricultural Economics*, an informing article on the above subject.

The history of Agricultural co-operation dates back to early eighteenth century, when Societies, partly co-operative and partly philanthropic, were started to help the ryots with loans, during the farm epidemics then raging; and the necessary capital was raised by free gifts and members' contributions. About the middle of the century, Rural Loan Banks were organized and the members subscribed the capital by consenting to a form of land cess. Later on arose a number of "Grain Houses"—really Loan Banks, lending grain instead of money.

But, Stanislaw Staszic may be called the pioneer of Agricultural Co-operation in Poland, as understood to-day. In 1822 he founded an Agricultural Co-operative Society in Hrubieszow. For the purpose, he divided the whole of the estate among the inhabitants, who were in return required to pay a fixed contribution to the Society; and the members were jointly and severally liable for payment of the taxes, and compensating bad harvests and damages by hail or fire to any member of the Society. The Society owned a bank, with capital made up by interest on fixed deposits and first charges on the profits of the mills, fish ponds and fields jointly owned. The Bank gave loans for agricultural improvements and for the formation of industrial and commercial establishments. The Society also maintained three Grain Banks, five primary schools, a hospital and homes for the aged, the cripple and the orphans. The management of the Society rested in the Chairman, a hereditary officer, and six administrators chosen by the members. This was the only Society which survived the Russian persecution at the close of the 18th century, while the whole of the remaining edifice of co-operative movement collapsed with the partition of Poland: and only a hundred years later, the movement could raise its head again. But soon, another catastrophe in the shape of the European economic crisis of 1873, coupled with the national rising in Poland, nearly shook the movement to its roots. When, however, it was realized that the armed struggle was of little use, the co-operative movement became once more an element of national defence and showed remarkable development, reaching its climax in 1886.

Legislation too has contributed its own share to the development of agricultural co-operation in Poland. Societies came under German, Austrian or Russian legislation according to the locality in which they had been organized, but the greatest influence was exercised by German legislation. These legislations being very defective in the beginning were actually a hindrance rather than a help to the Societies; but recent enactments have largely rectified the defects, and have made possible the consolidation of the whole movement. At present, these institutions may be divided into three groups: (1) the Stefczyk co-operative local banks and societies attached to them; (2) the Wawrzyniak popular banks and attached societies; and (3) the consumers' societies. The first two have adopted foreign models to polish conditions, supplementing them by their own experience and observation; and all three retain to this day a purely national character.

The Stefczyk Banks were so called after the name of their organizer, Francis Stefczyk, and the first bank was started at Czernichow. The special features of the institution were first its two-fold inspiration, patriotic and educational on the one hand, and economic on the other, a strictly defined field of activity, unlimited liability, small subscriptions and dividends, the exclusion of the Bill of Exchange as a form of credit, and the impossibility of alienating the reserves. These banks were very popular, and soon a network of these spread all over Poland. Recently, the War and the consequent depreciation of the mark were a great blow to the resources of these banks, and but for the timely aid of the Government, the very existence of the banks was uncertain. Since the War, however, a change for the better is noticeable.

Side by side with these banks of unlimited liability, there were established Agricultural Selling Associations, or Co-operative Societies, with limited liability, trading in agricultural produce, artificial manures, farm machinery, fuel, building material, etc., required by the cultivator. There were also Co-operative Dairies for the supply of milk and its by-products and Co-operative Egg-Selling Societies engaged in the collection, purchase and sale of eggs as well as in poultry-keeping. Besides these, there were other Societies connected with the Stefczyk banks, like the Basket-makers' Societies, Electric Power Co-operative Societies, Co-operative Confectionery Societies, and Societies for Poultry-keeping, Building, letting of land, etc.

All these Societies had a common bank, the Central Bank of Agricultural Co-operative Societies, with an initial capital of 2,000,000 crowns, which has since increased enormously. Principally, savings deposits constituted the working capital of the bank, and when the bank, like other Societies, was adversely affected by the War, the Government, recognizing the importance of the bank for agricultural savings, came to its help, both directly, in the form of credits, and indirectly, by means of guarantees.

Another salient factor in the development of Polish Co-operation, is the Audit Unions, which are responsible, to a very large extent, for bringing about agricultural co-operation in Poland. The main work of these Unions is the supervision of the societies, but they also publish periodicals, handbooks and instructions for the societies. They represent their members in any procedure of common interest, legal, administrative or financial. In short, these Unions are supervisory, advisory and representative bodies, exercising a considerable influence on the members.

As pointed out already, the War and the depreciation of the currency had a disastrous effect on the Agricultural Co-operative Societies of Poland, with the exception of the Selling Associations. But the monetary and financial reform in Poland and the establishment of the Bank of Poland saw a revival, as evidence of which was formed, in 1924, the confederation of the Unions of the Agricultural Societies of the Republic, in Warsaw, which stands at the head of the Polish agricultural co-operative movement.

The Wawrzyniak Popular Banks had this special feature distinguishing them from the Stefczyk banks, that the clientele of the former was the burgeois class while that of the latter was the cultivators. These Popular Banks usually pay for the administration, their sphere is larger, and the subscriptions higher. The first Union of these banks was started at Poznan, where was also the Bank of the Union of Co-operative Societies of Poznan, which was largely responsible for the development of the Wawrzyniak banks.

The Agricultural Selling Associations connected with the Popular Banks did the purchase and sale of agricultural produce, farm machinery, etc., bought and sold by the farmer. These Associations were worked on a basis of limited liability and membership was entirely confined to agriculturists. In addition to these, there sprouted, with the help of the Popular

Banks, nine milk-selling societies, eight land distribution societies, four bakeries, one sugar refinery, one slaughter house and a number of consumers' societies. These last-named co-operative consumers' societies were first established in 1869 and are rapidly increasing ever since. There is a wholesale depot for these societies at Poznan, and it is doing much good work.

In conclusion, it must be noted that the War marked a crisis in the history of the Agricultural Co-operative movement in Poland. Great were the changes in the economic position and the actual nature of the co-operative societies, and at the same time, their centralization became essential. So, to-day, the whole of the Agricultural Co-operation in Poland is found centralized under the two bodies, the Federation of the Union of Polish Co-operative Societies, at Poznan, and the confederation of the Unions of Agricultural Co-operative Societies of the Republic of Poland, at Warsaw.

Industrial Standardization in Norway.

The Norwegian Industrial Association introduced a plan last October for the standardization of all industrial commodities produced in Norway, and established, with the help of Government and private subscriptions, a standardization committee to report for about three years.

The Norwegian Government has recently established the standardization office, which is an outgrowth of the activities of the Industrial Association. This office will investigate standards in use at home and abroad with the object of adopting those that are applicable to Norwegian industries. Its efforts will centre in effecting greater uniformity in the dimensions, patterns, and quality of the country's products. By co-operating with producer and consumer, the office hopes to ascertain and abolish variations of products unnecessary for normal requirements; to introduce uniform description of articles; and to eliminate ambiguities in sales and purchase contracts.

The first two matters to receive attention, writes the United States Acting Commercial Attache at Copenhagen, will be the standardization of paper sizes and the uniform execution of technical drawings. Subsequently, all other products will be considered with the idea of reducing production costs, and giving the consumer goods of greater practical usefulness.

Mysore Economic Conference.

Board of Industries and Commerce.

The following is a summary of the proceedings of the Sixth Meeting of the Board of Industries and Commerce held on Monday, the 21st December 1925, at 1 p.m. with Mr. K. R. Srinivasa Iyengar, Esq., M.A., 1st Member of Council (*Chairman*) in the chair in the Chambers of the First Member of Council:—

I. Consideration of the Proceedings of the meeting of the Sub-Committee relating to Internal Trade held on 13th July 1925.

The Chairman informed the Board that most of the resolutions of the Sub-Committee had been discussed by the Board at its last meeting and had been sent to Government with the Board's recommendation and that there remained only one or two more items left over for consideration this day.

The Proceedings of the Sub-Committee was then taken up for consideration and the question of appointment of Commercial Travellers was discussed. The Chairman mentioned that some time back there were some Commercial Correspondents in Bombay and Madras and enquired as to why they were discontinued and he also requested the Convener of the Sub-Committee to clearly explain the intentions of the Sub-Committee regarding this point.

Mr. P. G. D'Souza said that the appointment of the Commercial Correspondents was discontinued as their services were not required by local merchants, that they were quite different from Commercial Travellers now proposed and that these Travellers were meant to be deputed by Government to visit all likely markets for Mysore products with a view to enable better price being obtained for them by reducing the profit of the middlemen who had monopolized the trade in certain commodities to them. He also added that as at present there were no trade associations that would undertake such kind of work, the Government had to take the lead in it.

After some further discussion it was resolved "That the Department of Industries and Commerce should make arrangements to help the Agriculturists and Industrialists in Mysore by collecting and furnishing correct information as regards the most likely and profitable markets for all important products, the names of wholesale merchants who deal in these products in different places, the places where agencies could be set up, and that substantial help may be also rendered by Government to any private organizations of such growers who may wish to take action in this respect."

The question of holding a Merchants' Conference was next taken up. The Chairman wanted to know if the Chamber of Commerce could not arrange for holding the Conference and was told in reply that the Chamber held an annual meeting to which only members were invited. He then suggested that instead of having a general Conference of all merchants, it would serve a more useful purpose if a Conference of merchants who deal in particular kind of commodities could be arranged for periodically, the Director of Industries and Commerce taking the initiative.

He added that the information obtained by mere exchange of views was very useful and important and the results of such a Conference could not be easily judged by ordinary standards. He instanced the meeting of the timber merchants convened by the Conservator of Forests and the meeting of the licensees in regard to prospecting licenses held by the Director of Geology and explained how they helped the Department to ascertain the views of the merchants and other difficulties. He observed that the Director of Industries and Commerce or any other Head of the Department may, with advantage, arrange for similar meetings of persons interested in particular industries with the subject connected with it.

"Resolved that periodical Conferences of merchants interested in every important branch of trade might be arranged to be held by the Director of Industries

and Commerce or other Officer of Government interested in such trade with a view to review the condition and the facilities required for its development."

It was resolved "That arrangements should be made for holding Agricultural and Industrial Exhibitions at Mysore during Dasara Season at least once in three years, every effort being made to make the same self-supporting and that action should also be taken for the establishment of a permanent Industrial and Commercial Museum on an adequate scale either in Bangalore or Mysore."

II. Consideration of the Proceedings of the Meeting of the Sub-Committee relating to drafting of a Bill for introducing Workmen's Compensation Act held on 9th December 1925.

The Chairman read out the Proceedings of the last Meeting of the Board as well as the Proceedings of the Sub-Committee. He mentioned that the changes required in the British India Act were, the omission of clauses relating to marine, etc., fixing up the rate of compensation and that of age of an adult.

The Chairman also said that even if the Act be passed, it would be a year or two before it would come into operation.

After discussion, it was resolved "That information be collected regarding the total number of employees in Government and private concerns in the State that would come under the operation of the Act as also the percentage of such employees that are not protected from any voluntary scheme of Compensation framed by the Employer and that the reports of the British Provinces be also obtained about the working of the Act since it was introduced therein 2 years ago."

III. Consideration of the Proceedings of the Sub-Committee meeting relating to Revision of Rules for the grant of Takkavi Loans held on 14th December 1925

The proposal of the Sub-Committee regarding the grant of Hire Purchase Loans was first taken up. The Chairman brought to the notice of the Committee that under the rules in force the only security for the loan was machinery and that in a good number of cases, in which the loan holder committed default and the machinery had to be seized and sold, it did not fetch even 50 per cent of the original value, so that the Government were put to considerable loss over the transaction.

After discussion it was resolved "That Hire Purchase Loans might be granted up to a limit of Rs. 5,000, that 50 per cent of the value should be recovered as Preliminary Purchase money instead of 25 per cent as at present and that in case of any special machinery for which there was likely to be no demand if sold, the Director of Industries and Commerce might be authorized to demand collateral security in addition to the loan."

It was resolved "That the rate of interest for Industrial loans be fixed at 6 per cent instead of 7 per cent as at present."

The question of maximum time limit that could be given for the repayment of loans was then considered.

Mr. P. G. D'Souza said that it was not advisable to extend the present period of repayment and that if the man was not able to turn over and make money within 7 years, he could not do so even after many years.

The Industrial Chemist suggested that the loan may be made repayable after 7 years from the date of the commencement of the work.

It was resolved "That it was not necessary to raise the maximum period for repayment of the loan to 10 years as suggested by the Sub-Committee and that the period may be fixed as seven years provided that when the industry takes some time to be started the Government may in special cases order the postponement of the repayment and that interest be made payable on all sums advanced by Government from the dates of disbursement."

The question as to the powers of the Director of Industries and Commerce to grant loans was next considered. After some discussion the Board resolved :—

"That the Director might be empowered to sanction loans up to Rs. 2,500, that loan applications between Rs. 2,500 and 10,000 may be sanctioned by Government without reference to the Board of Industries and Commerce and that applications for loans exceeding Rs. 10,000 should be referred to the Board of Industries and Commerce for opinion, before they are sanctioned by Government. Further it was resolved that a quarterly statement of all loans sanctioned both by the Director of Industries and Commerce and Government should be sent to the Board for information."

As regards the formation of a special Sub-Committee to frame an enactment on the lines of Madras State Aid Bill, the Board decided that no legislative enactment was necessary in this respect and that the present rules if modified on the above lines would quite suit our people.

IV. Consideration of the letter from the Secretary, Economic Conference, regarding the grant to St. Joseph's Convent.

The Chairman read out the existing Government Order regarding the grant to Home Industries Classes and said that it only fixed the grant of pay of the teacher and a certain sum towards wastage. He suggested that instead of dealing with the application of the Convent as a special case, a general rule be made for institutions seeking aid, fixing the limit of grant per pupil for each of the Industries indicated in the Government Order, and that the application of the Convent be regarded to be disposed of in accordance with such rule.

It was accordingly resolved that the following scale be adopted :—

Industry	Period of training prescribed for any pupil	Maximum grant per pupil	Maximum strength of class
Rattan and tailoring ..	1 year	Rs. 2 per pupil	12
Sewing and Dress making.	1 year	Rs. 2 per pupil.	12
Wick, tape and Handkerchief Weaving. ..	1 year	Rs. 3 per pupil.	10
Crochet, Embroidery ..	1 year	Rs. 4 per pupil.	10

The Chairman observed that suitable measures should be adopted to check the attendance of pupils at the institution to which grant is made with a view to ensure that the grant is justified under the rules and suggested that a local committee may be appointed for the purpose in respect of each institution and that the Director be asked to frame a set of rules in this respect. This was agreed to by the Board.

V. Scheme about the manufacture of Electrolytic Alkali.

The Chairman said that the scheme was drawn up by an Officer who had been trained in Electro-Chemical

Industry and it was thought that he would examine and work up the scheme and since his services were not available for the purpose now, the scheme might be referred back to the Department of Industries and Commerce for submission of fresh proposals.

The Industrial Chemist said that the subject had been considered by the late Board of Scientific Advice. The scheme was examined by Mr. Forbes and recommended to Government. On account of the financial stringency the Government kept the scheme in abeyance. He said that the total cost of the scheme was expected to amount to Rs. 70,000 then and the return was expected to be at least 7 or 8 per cent. He said that there was no experiment to be done so far as the technical portion of the industry was concerned and that there was a firm in Mysore interested in the industry. He gave an instance of a small firm working in England with 8 cells and the profits earned by it.

After some discussion it was resolved: "That the scheme might be referred back to the Department of Industries and Commerce for further investigation and submission of fresh proposals to the Board."

VI. Industrial Co-operation.

The Chairman read the paragraph of the Government Order No. I. C. 6492-6543- I. & C. 31 23-11, dated 30th March 1925, relating to Industrial Co-operation and wanted to know whether a permanent Board consisting of the Director of Agriculture, Director of Industries and Commerce and the Registrar of Co-operative Societies with three non-official gentlemen was necessary.

The Secretary, Economic Conference, said that the intention of the Committee was not that the Board should conduct preliminary investigations but that the result of such investigations might be placed before the Board, as the Officers of the Department concerned would be able to give their opinion as to the suitability of the area for locating any Co-operative Society.

The general sense of the Board was that there was no necessity to have a separate Board for the purpose.

It was accordingly resolved: "That there was no necessity for a permanent Board and that the Registrar of Co-operative Societies may act in consultation with the Heads of the Departments concerned, local people being co-opted whenever necessary."

Punjab Board of Economic Inquiry.

The following is a summary of the Proceedings of a Meeting of the Board of Economic Inquiry, Punjab, Rural Section, held in the Financial Commissioner's Room, Lahore, at 11-0 a.m., on Thursday, the 26th November 1925, with Mr. C. M. King, C.S.I., C.I.E., I.C.S. (*Chairman*) in the chair.

AGRICULTURAL INDEBTEDNESS INQUIRY.

Mr. Strickland intimated that he had summarized the data on this subject collected by the six investigators of the Board, and had submitted a note on the subject to the Hon'ble Member for Finance. A discussion took place as to whether the results could be prepared in a form which would be suitable for issue as one of the publications of the Board, and whether the questionnaires prepared for this inquiry should be completed by future investigators. It was agreed that the Secretary should endeavour to obtain prints of Mr. Strickland's note from the Government Printing Press, circulate to members, and bring the matter up for discussion at the next meeting of the Board. It was agreed that a month's extension should be granted to investigators who had fallen behind in their work on account of this additional inquiry.

GENERAL ECONOMIC INQUIRIES.

A.—Begun in January 1925.

(*a*) *Amritsar Inquiry.*—Mr. King reported that since his return from leave he had not had time to go through the work of the investigator, but promised a full report at the next meeting of the Board.

(*b*) *Multan Inquiry.*—No report had come to hand from Mr. Dunnett. (It arrived after the meeting, and satisfactory progress is being made.)

(*c*) *Rohtak Inquiry.*—Professor Brij Narain intimated that he hoped the Report of this inquiry would be ready by the end of the year.

(*d*) *Rawalpindi Inquiry.*—Mr. Calvert intimated that the work in the village was practically completed, and the Final Report should be ready by the end of December.

B.—Begun in March-April, 1925.

(*a*) *Jullundur Inquiry.*—Mr. Calvert intimated that the work of this investigator was the reverse of satisfactory. Mr. Strickland reported similarly on his work in connection with the Agricultural Indebtedness Inquiry. The Board commissioned Mr. Calvert on his visit to Jullundur to make an examination of the work this investigator had done, and, if he still considered it as below standard, to give him one month's notice of dismissal.

(*b*) *Lyallpur Inquiry.*—The Honorary Secretary read a letter from Mr. Roberts, and agreed that he be given authority to appoint an investigator to complete the work begun by S. Jaimal Singh (deceased).

C.—Begun in 15th June, 1925.

(*a*) *Hissar Inquiry.*—Report from Mr. Trevaskis, Member-in-Charge, was read, and the Board agreed that Bashir Ahmad be confirmed in his appointment.

(*b*) *Dera Ghazi Khan Inquiry.*—Mr. Penny reported that he was not altogether satisfied with the work of this investigator, and recommended that his confirmation be kept pending. To this the Board agreed.

(*c*) *Sialkote Inquiry.*—Report from Mr. Coatman, Member-in-Charge, was read, and the Board agreed that Ch. Ghulam Nabi should be confirmed in his appointment.

Mortgage Inquiries.

(*a*) *Rawalpindi Inquiry.*—Mr. Calvert informed the Board that the investigator appointed for this inquiry had suffered from bad health during the hot weather, but was otherwise satisfactory. His appointment was confirmed.

(*b*) *Ferozepur Inquiry.*—Mr. Calvert intimated that though this inquiry had been sanctioned at the last meeting of the Board, he, whilst acting as Secretary, had not made any appointment on account of fear as regards the Board's financial resources. The Honorary Secretary reported that the funds of the Board would stand this additional inquiry, and Mr. Calvert was authorized to select an investigator.

The action of the Chairman in sanctioning an "*Inquiry into Cultivators' Holdings in the Punjab,*" to be undertaken through official agencies, at no cost to the Board other than that of printing, was confirmed. Mr. Calvert intimated that data had now been received from all the districts, except Jhang, and he hoped to have the Report ready in time to be circulated to members before the next meeting.

Finances.

(*a*) The Honorary Secretary reported that an additional grant of Rs. 3,000 from the Government of the Punjab had been received on account of the expenses incurred in connection with the Inquiry into Agricultural Indebtedness.

(*b*) The Honorary Secretary reported that Government had been petitioned for a budget grant of Rs. 51,000 for the Rural Section for 1926-27.

Other Business.

(*a*) The Honorary Secretary read a letter from Mr. Stow on the subject of assistance given to investigators by *patwaris*. The Board agreed that it would be in order for an investigator to submit through his Member-in-Charge, on the completion of his Report, a recommendation for a grant to be made to the patwari according to the amount of assistance received, such grant in no case to exceed Rs. 100.

(*b*) The Board appointed Professor W. H. Myles, General Editor of the Publications of the Board.

(*c*) The Honorary Secretary reported that he had received a most interesting note from Mr. Stewart on the *Expenses of Batai Cultivation in the Lyallpur District*, and intimated that Mr. Stewart was willing to have it published by the Board, if it were thought of sufficient merit. It was agreed that copies should be circulated to members, and the matter should be considered at the next meeting.

Books in Brief.

Short Reviews of Recent Books.

Factory Legislation in India.

By Rajani Kanta Das, M.Sc., Ph.D.

Dr. Rajani Kanta Das, late lecturer in Economics, New York University, now Director of Rural Survey in the Viswabharati University, equipped himself for the task of writing a book on Factory Legislation (as well as other books on Labour Movement) by seven years' investigation of the forces making for national efficiency and a study of agricultural production in America. In his investigation he discovered that India's poverty was due to her industrial inefficiency. As industrial efficiency is intimately associated with the Labour Problem, his attention was drawn to the human element in the modern industrial system. His actual work as an employee in American factories and his extensive travels in England, France, United States as well as India, are bound to give his book an extraordinary value, as a comparative study in factory legislation.

Apart from the general forces bearing on factory legislation, such as the conflicting interests of labour and capital, of conservatives and reactionaries in every country and of international competition with regard to the standardization of the labour laws of different countries, the author relates how at every stage, India's political and economic dependence on Great Britain gave rise to conflicting forces, and how factory legislation at every step was due to the impact of British commercial interests, which more often than not, resulted in a tendency to retard the growth of manufacturing industries in India, where the rapid expansion of the factory system was absolutely necessary as opening out new industrial opportunities for poverty-stricken Indians and the primitive Indian industries.

A.S.V.

Indian Currency.

By Mr. A. K. Sarkar, M.A. The Book Company, College Square, Calcutta. Price Re. 0-12-0.

Mr. A. K. Sarkar of the Hughli College, Chinsurah and Lecturer of the Post-Graduate Department of the Calcutta University, has laid us under obligations to him, by reason of his interesting and instructive monograph on "Indian Currency".

Beginning as an answer to the questionnaire of the Currency Commission, it is full of promise as an authoritative though brief pronouncement on the current "Currency Problems". Unlike the majority of writers on currency questions, who are in the clouds, the author writes clearly though briefly and to the point. Admitting that High and Low exchanges are things that do not matter in the long run, he is inclined to the view however, that at the moment, when they do attain the static position, they are matters of concern. In the case of India, absolutely speaking, a High Exchange is more harmful than a Low Exchange. If artificial stabilization is at all needed, a low-rate stabilization is preferable to a high rate one as a permanent measure, but if such stabilization is only a temporary measure, a prelude to the final solution of the Currency question, stabilization at the present formal rate of £1 = Rs. 10, would be a wise move. If, as it is reported, the Currency Commission will seriously consider the establishment of an effective Gold Standard, most economic thinkers are bound to support this view.

A.S.V.

The Mathematical Groundwork of Economics.

An introductory treatise by A. L. Bowley. (Clarendon Press, vi+98 pp) 7/-.

To the trite saying that *mathemata mathematicis scribuntur*—mathematics is written for mathematicians—De Morgan has effectively replied that he "shall pay no attention to that even to the extent of despising the judgment as rash". The recent history of science has even more effectively cast aside this exclusiveness, and not only physical and metaphysical knowledge, but biological and sociological knowledge has been gradually made to rest upon a basis which it had not before: it has become *mathematical*. The treatment of the theory of political economy during the past eighty years or more has, in the Austrian and Italian Schools, in the hands of Cournot and Jevons and in the writings of Marshall, Pigou, Edgeworth and Fisher developed a fascinating and peculiarly valuable analysis with the aid of the infinitesimal calculus. But that has been mostly scattered in different languages and journals, or briefly referred to in footnotes and appendices, or clothed in different notations, that it has not been possible for students and teachers to popularize the subject of mathematical economics. Dr. Bowley's book has standardized the different hypotheses and notations and has carefully detailed the fundamental

aspects of exchange and taxation. And Bowley is surely a past master in the art of writing books.

The theory of value, in so far as it relates to marginal utility, price, cost, surplus and elasticity, has been analytically explained. The factors and types of production have been dealt with under the hypotheses of competition and of monopoly; and the effects of taxation on demand, supply and surplus very carefully described with the aid of mathematical notation. But that is all, the synthetic aspect of mathematical economics, the universal law that governs all types of satisfaction, and that comprehensive forms that derives all economic phenomena of production, consumption, distribution and equilibrium as mere illustrations of a general law is not here. In fact a "master theorem" is wanted in Mathematical Economics such as was sought for in Combinatory analysis and q-summability in the field of Pure mathematics, and when that is discovered and described mathematical economics will be rid of much of its initial difficulties, and Bowley's book perhaps also shorn of its uncouth diagrams Nos. 1 and 4, and of its unpleasant disquisitions in pages 1 and 2, page 36, pages 48 and 49, and page 58. The symbol for differentiation, Dx, makes several parts of the book unreadable and strange, and we would like to be taken into confidence with regard to his preference for this forsaken notation. Sudden approximations are similarly a great handicap; to wit, on p. 60, it is easier to follow that the increase in price there is NQ/y (1 − OK/ON) than its approximated value NQ/2y. The book does not deal, of course, with Applied Economics! International trade, Purchasing power, Foreign exchanges and economics of welfare are severely left alone and one cannot dispense with the mathematics of Marshall, Fisher, Carsel and Pigou. Similarly the statistical economics of the Cambridge and Harvard Economic Service is neglected. But Dr. Bowley's book is a valuable introduction to several uncut pages of the "Quarterly Journal", or unopened parts of the transactions of Economic Societies of foreign countries, while the treatment of the subject itself is in conformity with Dante's injunction *quod omnia quæ inferius probanda sunt, erunt manifesta sufficienter*—"all that shall be set forth below shall be made clear".

K. B. MADHAVA.

Articles in the Journals.

The Tropical Agriculturist, January, 1926.—Top Diseases of Plantains.

Engineering Progress. No. 1. 1926.—Power Station Design in Germany. By Dr. G. Klingenberg, Director of the A. E. G.

Dunn's International Review, January 1914.—Good Roads Movement in Latin America. By L. O. Welcome.

The Journal of the Ministry of Agriculture, January. 1926.—The Manuring of Potatoes. By R. W. Wheldon, M.Sc.

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Detailed Contents.

PAGE

INDIAN CURRENCY PROBLEMS—
By B. N. Chatterji, M.A., B.L., and Daya Sankar Dubey, M.A., LL.B. .. 91

THE TRANSITION TO GOLD—
By the Right Hon. R. McKenna .. 97

CO-OPERATION IN INDIA—
By H. E. The Governor of Bombay .. 102

MALNAD IMPROVEMENT SCHEME—
By S. Subbarama Aiyar, M.A., Dip. Econ., Senior Lecturer in Economics, Christian College, Madras .. 105

EDUCATION IN INDUSTRY AND COMMERCE—
By P. A. Best, Managing Director, President of the Association for Education in Industry and Commerce, London 108

JAPAN AND INDIA'S COTTON MILLS. 110

BOMBAY DEPARTMENT OF INDUSTRIES, 1924-25—
By the "Bystander" 112

MADRAS LABOUR DEPARTMENT, 1924-25—
By A. S. Venkataraman, B.A. .. 113

PAGE

INDIA'S RAILWAYS, 1924-25—
By "Scrutator" 114

ECONOMICS IN THE WEST .. 115

INDIAN ECONOMIC NOTES .. 118

CANADIAN TRADE AND FINANCE .. 120

THE SESQUI-CENTENNIAL EXPOSITION 124

AGRICULTURAL CREDIT IN CHINA—
By Christopher Hay, M.A. .. 127

TOPICS FROM THE JOURNALS .. 128

PUNJAB ECONOMIC INQUIRY BOARD 131

MYSORE ECONOMIC CONFERENCE.. 132

BOOKS IN BRIEF—
Population 132
Scenes and Characters from Indian History 133
The Purpose of Education .. 133
Taxation—The Nation's Business .. 134
A History of the Mahratta People .. 134

OTHER NOTES—
Capital and Co-operative Movement. 96
Tippoo Sahib's Treasure 106
Sandow 127
American Trade with India .. 135

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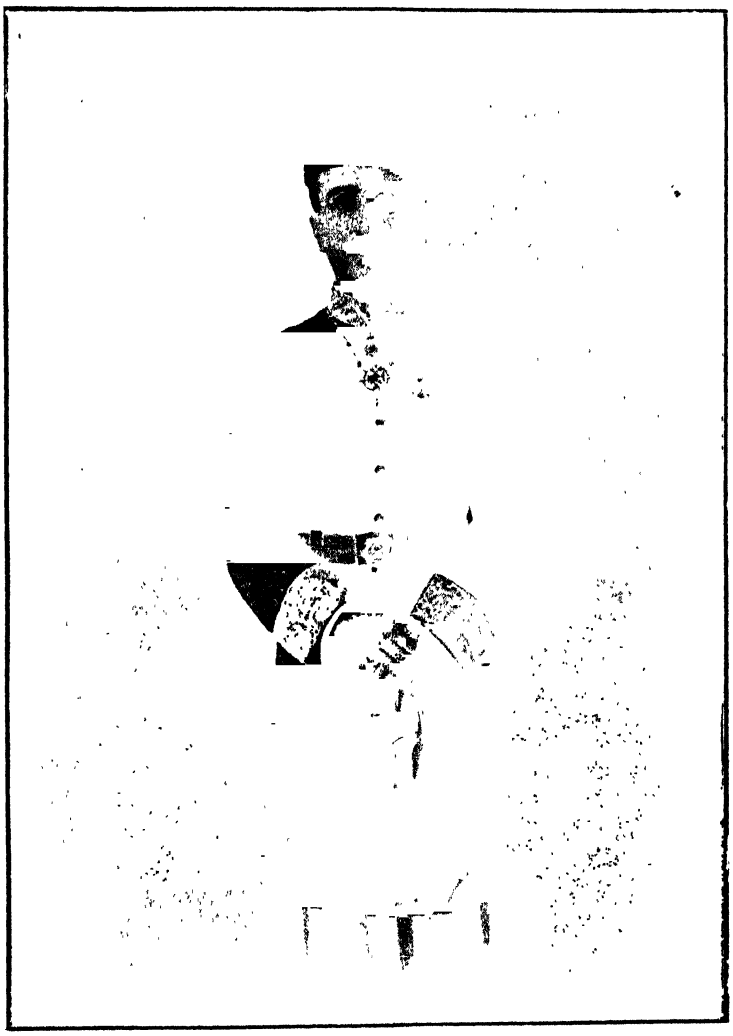
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Indian Currency Problems.

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The pre-war system of Currency and Exchange in this country has been known as the Gold Exchange Standard. The principles underlying this system are too well-known to require detailed description. The internal Currency was to consist mainly of token coins which were convertible into international Currency at the discretion of Government. Thus the system was one of partial redemption, *i.e.*, Government were under a legal obligation to issue Rupees, which were only token currency, in exchange for gold at Rs. 15 for a sovereign; but they were under no legal obligation to pay gold in exchange for Rupees. As a matter of fact, however, in order to maintain the stability of exchange, Government used to make sufficient supplies of gold available by selling Reverse Council Bills whenever there was a real demand for gold for foreign remittance purposes. Thus for a fairly long time they succeeded in preventing exchanges from falling below 1*s.* 3 29/32*d.* Similarly by selling Council Bills at 1*s.* 4$\frac{1}{8}$*d.* in unlimited amounts in London, and issuing Rupees on presentation of these Council Bills in India, or on receipt in India of telegraphic advices from London, exchanges were prevented from rising above 1*s.* 4$\frac{1}{8}$*d.* Thus the upper and lower limits for fluctuations in Indian exchanges were 1*s.* 4$\frac{1}{8}$*d* and 1*s.* 3 29/32*d.*

As long as the world conditions were normal the system worked smoothly though the Indian people were never satisfied with the system and they have been persistently demanding the introduction of Gold Standard and Gold Currency. Upto the time of the outbreak of the war the sole concern of the Government was the possibility of a fall in exchange owing to adverse Balance of Trade extending over a series of years. They did not and could not anticipate the abnormal rise in the price of silver during the war time which necessitated the raising of the rate of exchange. With exchange at 1*s.* 4*d.*, it would be profitable to melt or export silver rupees when the price of silver rises above 43*d.* per standard ounce. Thus the rate of 1*s.* 4*d.* sterling which had been maintained for over 15 years was definitely abandoned.

Objections to Gold Exchange Standard.

The main objections to the Gold Exchange Standard are as follows :—

Firstly, it is an artificial and managed system. Experience has shown that the system is likely to be abused. A notable instance of a grave currency blunder committed by Government was the sale of Reverse Bills Council in 1920 involving the Indian tax-payers in a net loss of over 35 crores of rupees. Not only Indian opinion but the most competent economic experts of western countries who have had a long experience of the working of Gold Standard are definitely opposed to a managed system. Mr. Hartley Withers jestingly calls Gold Exchange Standard as a 'half-way house' between

Gold Standard and Silver Standard. Professor Cannan observes in his Foreword to the "Problem of the Rupee" by Dr. B. R. Ambedkar as follows :—

"The recent experience both of belligerents and neutrals certainly shows that the simple Gold Standard is not fool proof but it is far nearer being fool proof and knave proof than the Gold Exchange Standard. The percentage of administrators and legislators who understand the Gold Standard is painfully small, but it is and is likely to remain ten or twenty times as great as the percentage which understands the Gold Exchange Standard."

Secondly, as Sir Dadiba Dalal pointed out in his Minute of Dissent to the Report of the Smith Committee that the effect of the unlimited sales of Council Bills by the Secretary of State was to compel India to accept settlement of her trade balances in token currency. This is a very undesirable state of things. It is well-known that India imports a large amount of gold every year, but very little of this gold is taken to the Government and exchanged for rupees. It is mostly hoarded or turned into ornaments. The reason is not far to seek. People have no confidence in the Rupee. They know that once they part with gold, they may find it difficult to obtain it when they require it. The difficulty of obtaining gold during the last War is still fresh in their memory. Thus the Gold Exchange Standard indirectly puts a premium on hoarding of gold.

Thirdly, in maintaining the Gold Exchange Standard, Government seemed to be obsessed with the exaggerated importance of maintaining stability in Foreign Exchanges to the detriment of stability in internal prices. Whenever balance of trade became favourable, large amounts of Council Bills were sold and equivalent amount of rupees were issued from Indian Treasuries. But the contraction of currency was not easily brought about. It could only be brought about by the sale of Reverse Council Bills and locking up of rupees offered in exchange for them. Thus during years of heavy balance of trade, owing to considerable addition to currency, the price level would rise but during subsequent years, owing to limited contraction of currency, prices would not fall to the level warranted by the economic conditions. It is thus clear that the Gold Exchange Standard does not bring about an automatic expansion or contraction of currency.

Fourthly, during the War Gold Exchange Standard introduced another element of uncertainty. So long as sterling was equivalent to gold, the system could be worked somehow. But owing to various reasons sterling depreciated in terms of gold. The Rupee had so long been linked to sterling. Every depreciation of sterling in terms of gold increased the sterling value of silver. Thus another disturbing factor was introduced in the Indian Exchanges.

The only advantage which can be claimed for the Gold Exchange Standard is that it is scientific and economical, but a system, however scientific and advantageous it may be to the community, is bound to result in failure if it does not secure the willing consent of the people. Popular sentiment is a great asset in all matters pertaining to the currency system of the country. At the present moment there seems to be an unanimity of Indian opinion for the adoption of the Gold Standard coupled with Gold Currency. We are strongly of opinion that it would be a mistake of the greatest magnitude to go back to the Gold Exchange Standard against which there appears to be so much prejudice.

Gold Standard and Gold Currency for India.

We strongly recommend the immediate adoption of Gold Standard for India. The mints, in our opinion, should be immediately thrown open to the free coinage of gold Mohurs of the same weight and fineness as the English sovereign, and gold should be freely given in exchange for rupees at a fixed rate of 15 Rupees for every sovereign or Mohur. We further recommend that the coinage of fresh rupees should be totally stopped and in future fresh notes should be issued payable in gold only in exchange for gold tendered to Government. The times are highly favourable for the adoption of Gold Standard with gold in active circulation. Trade is showing signs of revival, the balance of trade has been in our favour for some time past and Government are no longer faced with deficit budgets. We advocate the adoption of Gold Standard on political and economic grounds. Rightly or wrongly, gold is much sought after in every country. Gold is still looked upon as the only international medium of payment. The last War has, it is true, familiarized the people in western countries with the use of paper currency and its advantages, yet their anxiety to revert to Gold Standard conclusively proves that they are not willing to remain satisfied with a paper currency which has no gold backing. Gold has indisputably come to be looked upon as a medium of payment of a prosperous free people. India aspires to come into line with

the economically advanced western countries and she has no intention to be deprived of the advantages of a system which has been universally acclaimed to be the most expedient under the circumstances.

We also recommend that in future the sterling requirements of the Government should be met either by the sale of Council Bills in London or by the purchase of sterling in India. The Indian Balance of Trade would thus be automatically settled by the free flow of gold into India which would be tendered to Government in exchange for either gold coins or gold notes. In pre-war years, the policy of selling Council Bills in unlimited amounts did incalculable harm to India, since it was mainly responsible for the flooding of the country with token currency. We are of opinion that Council Bills should only be sold primarily for avoiding the movement of gold from India to London to meet the Home Charges. Normally the balance of trade is in favour of India. In the absence of artificial restrictions on the free flow of gold to this country, Indian Currency in a few years time will contain an appreciable percentage of gold coins and gold notes.

To give effect to this scheme it would be necessary to establish a free gold market in this country. The Government must be prepared to purchase and sell gold in unlimited amounts at a fixed rate of one sovereign or Mohur for Rs. 15. The restoration of Gold Standard in England has removed one of the disturbing economic factors and with a little courage and determination on the part of Government, the remaining difficulties can be overcome.

Answers to Objections against Gold Standard.

We now propose to deal with some of the objections to the adoption of Gold Standard and Gold Currency in India.

There seems to be an impression in some quarters that the adoption of Gold Standard in India would cause an abnormal drain of gold on the existing gold stocks of the world. Gold is just like any other commodity which is bought and sold in the market. If India is prepared to pay the price, there is no reason why she should be deprived of her share of gold. During the last few years very large amounts of gold were exported from Europe to America in liquidation of debts due to the latter. No one questioned the right of U. S. A. to accept settlement of its claim in gold. If India had been a self-governing dominion her right to purchase gold in the open market and insist on the settlement of her claims in gold would not have been challenged by any body. The fact is, whatever currency system is adopted, India will continue to import substantial amounts of gold every year as she has been doing from time immemorial. The total amount of gold absorbed by India in this way is enormous, but as the whole of it is hoarded or turned into ornaments no portion of it comes into circulation. We believe that if Gold Currency is introduced, a portion of this gold which is at present hoarded will be available for currency purposes. Consequently the drain on the existing world stocks of gold resulting from the adoption of Gold Currency will at best be temporary and not continued and permanent as it is apprehended. We further believe that the temporary effects of this drain will in reality be beneficial to the western countries as it will lower the price level there to some extent.

It has also been stated in some quarters that gold coins would form formidable rivals of currency notes and consequently they are undesirable from economic standpoint. This objection seems to have no force. Notes are always preferred for making large payments. They are handy and convenient to carry about when travelling. Moreover, now that branches of the Imperial Bank are being established in various places, the demand for notes will increase still further because people who go to banks for encashing cheques invariably prefer notes to cash.

The real objection to the adoption of Gold Standard and Gold Currency seems to be the heavy cost that Government would have to incur in undertaking to redeem rupees into gold. Unfortunately the country has been flooded with an enormous amount of token currency the exact amount of which is difficult to estimate. Government of India were aware that sooner or later they would have to decide once for all the question of Gold Standard and Gold Currency. That the problem would become much more complicated and greatly difficult of a satisfactory solution by a continued issue of token currency in large amount must have been patent to them. With a little sympathy and imagination on the part of Government the ground for the adoption of Gold Currency might have been prepared long ago. The mischief has already been done and we must make the best of the situation. It is obvious that the coinage of gold Mohurs from the gold tendered to the Government by the people would not involve them in any

additional expense. The question of cost comes in in connection with the redemption of rupees into gold. So long as these rupees are not made freely convertible into gold, the adoption of gold coinage would of itself yield no fruitful result. The gold coins would simply disappear from circulation and the object of the policy would be defeated. It is, therefore, necessary that gold coinage and free conversion of Rupees into gold should go together. It is estimated that the amount of Rupees hoarded and in actual circulation is something like 320 crores. It is practically certain that not more than 30 per cent of this amount, *i.e.*, about 96 crores, is likely to be offered to Government for redemption. Government must, therefore, be prepared to keep sterling resources for this purpose worth about 120 crores. It appears from the latest official reports that the sterling resources of the Government (including gold and sterling securities in the Gold Standard Reserve and the Paper Currency Reserve) are worth over 85 crores of Rupees calculated at the official rate of 2*s*. gold per rupee. Calculated at 1*s*. 4*d*. (the rate which we propose) these resources are worth more than 120 crores of rupees. To add to this Government have at their disposal in these reserves silver coins and bullion worth more than 89 crores of rupees. If the sterling resources of Government proves to be inadequate for the conversion of rupees into gold, a portion of this silver stock can be sold in the market for gold. We realize that this course would mean a heavy loss to Government because the unloading of large quantities of silver in the market would depress the price of silver. The loss that Government would thus sustain should be made good from the Gold Standard Reserve for which there would be no need when Gold Currency is in circulation in India. In this way Government would be able to meet all demand for gold without any direct loss to the tax-payer. Obviously the rush for conversion would be temporary. Large sums of token money would still be required for small transactions.

SUGGESTIONS FOR THE TRANSITIONAL PERIOD.

We recognize that it would take some time for Government to give effect to the scheme of gold currency the success of which would depend *much* on the measures adopted during the *transitional period.*

With a view to minimize the rush for conversion of rupees into gold as far as possible we suggest as a *temporary measure* that the Government should convert rupees into gold only when they are tendered in amounts of Rs. 100 or more. This would make the conversion of rupees difficult for those from whom the rush is most apprehended. We believe that gold is hoarded at present because gold is not easily available. There is no reason to believe that with the introduction of Gold Currency hoarding would be practised to a larger extent than at present. When gold begins to come back to the Government in payment of taxes, the above restriction of Rs. 100 should be taken away.

We further suggest as a temporary measure that rupees should continue to be unlimited legal tender as at present. During this transitional period, the system would approximate to what is known as the Limping Standard. As long as the amount of Rupees and Currency Notes in circulation remains at its present figure which is, in our opinion, far in excess of the requirements of the country for limited legal tender, rupees cannot be declared limited legal tender. Steps should accordingly be taken during this period to retire Rupees and replace rupee notes by gold notes.

We have seen that with the introduction of Gold Currency there is likely to be a rush for conversion of rupees into gold. According to our estimate not more than 100 crores of rupees are likely to be tendered to Government for such conversion. Government should retire this amount of rupees from circulation and melt them and sell the silver bullion in the London Market to the value of Rs. 10 crores annually. Even after making allowance for a considerable fall in the price of silver, we expect that the Government would be able to sell silver at a price which would be more than 25*d*. per standard ounce. Even at this extremely low price, the loss to Government on melting 100 crores of silver rupees and selling the silver bullion for gold would in no case be more than 48 crores of Rupees. The Gold Standard Reserve which contains more than 60 crores of Rs. (valued at 1*s*. 4*d*.) should be written off to that extent. It may be remembered that this loss is not a real loss to the tax-payer. The Gold Standard Reserve was built out of the profits of coinage which were taken from the pockets of the taxpayers. As long as the loss from the sale of silver bullion does not exceed the total amount of the Gold Standard Reserve, the taxpayers would not actually pay more than what has already been taken away from them. Considering the size and population of this country we think that the minimum amount

of rupees required as token currency is 200 crores. It would thus appear that if only Government retire the rupees tendered to them for conversion into gold, the amount of rupees which will remain in circulation (estimated amount 320 crores less 100 crores retired) will be only 220 crores. We think that with this amount in circulation, rupees can safely be declared limited legal tender to the extent of Rs. 100 only.

The next question is, what should be done with the currency notes payable in rupees during the transitional period? The amount of notes in circulation at present is about Rs. 180 crores. The sterling resources of Government would obviously be inadequate to meet the demand for gold if these notes are made convertible into gold immediately. Consequently, these notes also should be declared unlimited legal tender as at present for the time being. Since our scheme presupposes the issue of gold notes, doubt may arise as to whether the currency notes payable in rupees will circulate at par with gold notes. We believe that there will be no difficulty because the rupee notes will be unlimited legal tender. After a year or two, when the confidence of the people is fully restored and gold begins to return to the treasury in payment of taxes and dues, Government should take in hand the work of cancelling rupee notes, say to the value of twenty crores of rupees annually and replacing them by gold notes which would be backed by at least 50 per cent gold in the Paper Currency Reserve. In this way in the course of nine or ten years, rupee notes would be withdrawn from circulation and replaced by gold notes.

Stabilization of Rupee at 1*s.* 4*d.* Gold.

We now come to the question of the rate at which the Rupee should be stabilized. One of the principal arguments in favour of stabilizing it at the rate of 1*s.* 6*d.* is that the rate has been stable for well over one year. It must be remembered that during the last two years there has been a change in the currency policy of Government. Sterling requirements of Government were obtained mainly by the purchase of sterling in this country. There have been no unlimited sales of Council Bills as in pre-war years. Further, owing to the operation of the statutory rate of 2*s.* gold, no gold could be tendered to Government in exchange for Rupees, nor could sovereigns circulate freely as their legal value was not more than Rs. 10. The net effect of these factors was to create a scarcity of currency in the country. In these circumstances to suggest that the stability of rate of 1*s.* 6*d.* was due to normal economic conditions is to ignore the truth. We believe that as soon as conditions become normal, the rate will revert to 1*s.* 4*d.* We know that to go back to 1*s.* 4*d.* would necessitate a larger sum of money being provided to the Budget for the payment of Home Charges and would lead to some inflation which may hit the poorer classes badly. But at the same time we may point out that High Exchange also is not particularly advantageous to poorer classes because their gain from cheaper goods will be almost set off by the tax (direct or indirect) payable to Government, the purchasing power of which under a High Exchange would be much higher. Neither High Exchanges, nor Low Exchanges are altogether good or bad for a country. But we have to take into consideration the peculiar economic condition of India which is still a land of undeveloped resources. We are avowedly Protectionists and would advocate any reasonable measure for the industrial development of the country. We find that a Low Exchange would indirectly help the struggling industries of the country which have been badly hit by the slump through which the country is passing. The difficulties of these industries have been accentuated by aggressive competition of foreign producers who have been indirectly favoured by the prevailing High Rate of Exchange.

If the Rupee is stabilized at the rate of 1*s.* 4*d.* gold, the scheme of Gold Standard and Gold Currency would be launched under very favourable circumstances. According to this rate the price of gold would be Rs. 23–14–0 per tola while the market price at present is Rs. 21–4–0 per tola. Therefore, the demand for gold at the higher price would not be very great and there will not be such a great rush for conversion of rupees into gold as would be the case if the rupee is stabilized at 1*s.* 6*d.*

We advocate the fixing of the Exchange at 1*s.* 4*d.* for yet another reason. During the last few years, Dr. Gustav Cassel of Sweden has been enunciating his theory of Purchasing Power Parity which states that the rate of exchange between two countries represents the relations of the purchasing power of the currencies of those countries. The principles of this theory have been accepted by the leading economists of most countries. Taking the

figures given in *Statist* we find that the Index numbers of prices were as follows :—

		United Kingdom	India.
Pre-war ..	1914	100.0	100.0
April ..	1923	147.1	178.0
April ..	1924	160.9	174.0
December ..	1924	173.8	176.0
July ..	1925	174.0	175.5

From the above table it is quite clear that the relation between the price level in the two countries in 1925 is practically the same as it was in 1914. We are, therefore, of opinion that the pre-war rate of 1*s.* 4*d.*, which represented the Purchasing Power Parity between the two countries for many years, should be the rate at which the Rupee should be stabilized.

SUMMARY OF RECOMMENDATIONS.

(i) The Gold Standard should be immediately introduced in India.

(ii) Indian mints should be immediately thrown open to the free coinage of gold *mohurs* of the same weight and fineness as the English sovereign.

(iii) Gold should be freely given by Government in exchange for rupees at a fixed rate of one sovereign or *mohur* for Rupees 15.

(iv) Coinage of fresh rupees should be totally stopped.

(v) New currency notes, to be issued, should be made payable in gold only.

(vi) Rupee should be stabilized at the rate of 1*s.* 4*d.* gold.

(vii) In future Council Bills should be sold, if necessary, to meet the expenditure of Home Charges only.

(viii) There should be a free market for gold in this country.

(ix) The Government should be prepared to give Rs. 15. in exchange for a sovereign or a *mohur* to an unlimited amount.

(x) Government should convert Rupees into gold only when they are tendered in amounts of Rs. 100 or more. This restriction should be withdrawn when gold begins to come back to Government in payment of taxes and dues.

(xi) Rupees should continue to be unlimited legal tender for some time. When the circulation of Rupees is reduced by 100 crores, they should be made legal tender up to Rs. 100 only.

(xii) Government should melt for ten years about 10 crores of Rupees every year and sell the silver bullion in London for gold, writing off the loss that may be incurred in this transaction from the Gold Standard Reserve.

(xiii) Rupee notes should continue to remain unlimited legal tender. When gold begins to come back to the Government in payment of taxes and dues, the Government should issue annually gold notes of about 20 crores of Rupees worth, backed by 50 per cent gold in the Paper Currency Reserve, the corresponding amount (*i.e.*, 20 crores) of Rupee notes being cancelled every year till all the rupee notes are cancelled

Capital and Co-operative Movement.

The basis of the co-operative movement is the banding together of a number of persons with slender resources in order to create an effective aggregate of capital to enable the organization to undertake on their joint behalf other functions than those of working for a wage. The co-operative movement is, says the *Times*, a practical exposition of the basic truth that capital is essential to progress, while its modern development is a recognition and proof of the fundamental importance of choosing capable individuals to act as directing heads, in order that the efforts of the individual units may be effectively co-ordinated to achieve some mutually advantageous end. The social system is not perfect, though no one can look back over the last 50 years without recognizing what tremendous strides have been taken in the direction of improving the lot of those who labour, and that progress is still going on year by year. But in any social system it is necessary to protect real wealth and to provide for the direction of human effort. The results shown by the systems adopted by civilized countries under ordered Government are so vastly superior to those of which uncivilized communities or a Soviet State such as Russia can boast, that no intelligent person would for one moment hesitate to range himself on the side of our present system if it were ever seriously attacked by men who imagine that the destruction of the fruit of countless generations of mankind is the way to greater prosperity for the inhabitants of the modern world. However keen may be our sympathy with those who are endeavouring to improve the lot of the workers, it must never be forgotten that economic laws are natural laws that can neither be flouted nor ignored without disaster.

The Transition to Gold.

By the Right Hon. R. McKenna.*

Our return to the gold standard is the outstanding financial event of the year. Its profound importance to our currency and credit system is acknowledged; yet the final step was taken without noticeable disturbance and our ability to recover and hold a free gold market has been firmly established. Precautionary arrangements were made in order to meet the possibility of an excessive demand upon our stock of gold, but notwithstanding some loss no occasion has arisen for making use of the facilities obtained in the United States. On what we may term its exchange aspect the operation was entirely successful; and our financial authorities may be congratulated upon their achievement, in which the sympathetic attitude of the American bankers was a material factor.

On the other hand, we must recognize that the transition to gold seriously impaired our export trade. Financial measures were adopted which raised the exchange value of sterling but had no immediate and proportionate effect in lowering our internal prices. Our situation indeed was the reverse of that which exists in countries with depreciating currencies. In France, for example, prices are low for foreign buyers because of the heavy fall in the franc, and French traders consequently enjoy a premium on exports. In our case on the other hand, foreigners found the price of sterling too high, measured in terms of their own currency, to permit of their buying British goods, and British exporters were, therefore, at a serious disadvantage in world markets. For evidence of this effect on our foreign commerce we have only to look at the official returns, which for several months showed an exceptionally large unfavourable balance. But this impediment to our export trade is fast disappearing. Since last spring the price level in England relative to other countries has fallen considerably, and the overvaluation of the pound sterling has ceased to be an important factor in our foreign trade.

The immediate question of interest to this country is the effect of the return to gold upon British trade and employment. It is a question of the greatest importance to the whole community and is worthy of the closest consideration. I am reluctant to traverse old ground, and particularly unwilling to revive bygone topics which to-day have lost all actuality. But we cannot measure the effect of the change without first examining the influence of financial policy during those years when our monetary system worked independently of gold, and I must, therefore, refer, though as briefly as I can, to our trade and financial history in the last five years.

The story of our trade in recent years is not an inspiring one. Since 1920 business has been continuously depressed. The depression has varied in intensity, but its severity throughout the whole period can be judged by comparing the statistics of unemployment with those of earlier years. An exact comparison with pre-war figures is impossible, as the live register, which gives the most complete record of unemployed persons, is only of recent creation. Percentage figures, however, of unemployed members of trade unions paying benefit and furnishing returns are available over a long period, and if we assume that the total of unemployment is proportionate to the unemployment among the members of those unions we get a fair basis for comparative purposes. I have adopted this method of relating recent figures to those of the earlier years of the present century.

Course of Unemployment.

During the first fifteen years unemployment was greatest in 1908, a time of exceptional crisis; but even in this year of maximum figures the average number may be taken as less than 800,000, and the peak probably never rose to a million. The conditions in 1909 were only a little better; but in no other of the remaining thirteen years did the figures approach anything like this magnitude. After 1909 trade gradually improved, and in the four years 1911 to 1914 the average of unemployment probably lay between 300,000 and 400,000. Now how do these figures compare with the actual records of the live register in post-war years? Statistics strictly comparable with those now published are available only from the beginning of 1921, but it may be inferred from earlier returns that in July 1920 the unemployed numbered less than 500,000. Six months later, at the end of January 1921, the unemployed exceeded

* Part of Speech delivered by the Right Hon. R. McKenna, Chairman of the Midland Bank, Limited, on January 26, 1926.

a million, and by June of that year the total had risen to nearly 2,200,000, a figure in part due to the prolonged coal strike. This was the highest recorded point, from which for three years there was a slow decline with inconsiderable fluctuations. By June 1924 the number had fallen to little more than a million. During the last eighteen months the figures first rose to 1,400,000 and then fell again and stood at the end of 1925 at 1,200,000.

Such is the actual record of the last five years. The excessive amount of unemployment is generally attributed to one or more of the following causes: first, that much of our plant in the heavy industries is out of date and our organization defective; secondly, that there is a superabundance in the world's supply of those commodities which we usually export; thirdly, that wage costs are too high, more particularly in some of the sheltered industries; next, that the burden of taxation, both national and local, throws a charge upon industry which handicaps us in competition for foreign markets; and lastly that the unsettlement of Europe has gravely restricted the purchasing power of many of our customers.

Undoubtedly these factors, to the extent that they exist, are serious obstructions to trade, and no effort should be spared to remove them. But it will be observed that all of them have been operative throughout the period since the war, and that neither individually nor collectively could they afford an explanation of the great fluctuations in unemployment we have recently experienced. They were in operation in 1920, when our figures of unemployment stood at less than 500,000; they were in operation, even allowing for exceptional circumstances, when those figures rose to 2,200,000; and, with some amelioration it is true, they were still in operation during the three years when unemployment was being steadily reduced by more than one-half. We may be assured that the whole level of national prosperity can be raised by proper attention to our industrial and economic defects but we must seek some other reason for the remarkable fluctuations in employment during the last five years.

Influence of Monetary Policy.

Is there then any other contributory cause of this long-continued trade depression? And what is the explanation of the wide variations in employment in comparatively short periods of time? Is there indeed any explanation at all, or is it a haphazard affair which nobody can understand and which we need not trouble to investigate? There is in truth no mystery about the matter, and in dealing with any country but our own we should not have the slightest difficulty in forming a right judgment. When we ourselves are not immediately concerned we recognize at once the influence upon trade of monetary conditions and policy. If we see, for instance, that there has been practically no unemployment in France since the war, we find unhesitatingly a partial explanation of the phenomenon in the inflation of credit and currency. No one doubts that monetary inflation must ultimately prove disastrous; but our firm conviction of its vicious effects in the long run does not prevent us from recognizing that while it lasts it stimulates trade, and particularly the export trade. Or if, to take an opposite example, we look at Germany we find that, notwithstanding a comparatively low level of wages and a tolerably high degree of efficiency of plant and organization, trade is depressed and unemployment is rife. Here again we recognize the cause at once in the internal monetary conditions following upon the collapse of the mark. There is not enough currency or bank credit in Germany to carry anything like the volume of trade she is capable of conducting. The country has not yet recovered from the severe deflation necessarily forced upon her after the orgy of inflation which destroyed her old currency, and the basis of credit is still far too restricted for commercial needs.

Thus in France and Germany we can estimate quite dispassionately the influence of monetary and credit conditions. It is only when we turn our view from foreign countries and come to consider our own case that we meet a certain reluctance to discuss the effect of monetary policy upon trade and employment. That such influence exists is not categorically denied, but the subject is too often treated as one better left alone lest we be led on to unorthodox conclusions. It is not, however, an illegitimate curiosity which seeks to understand the principles that guide the control of credit; and if we are to form a rational opinion of the probable effect on our trade of the return to gold we must take cognizance of the meaning of the change. We cannot escape from a reference to former monetary policy as a preliminary to discussing the new conditions resulting from the restoration of the gold standard.



The New Maharaja of Indore

Deflation and the Volume of Trade.

Since 1920 a policy of deflation has been pursued with varying degrees of intensity. Let us see what this means in its effect upon trade. At any given moment the total volume of trade in the country is conducted on the basis of the credit and currency existing at the time. If prices were higher a larger volume of credit would be required for the same amount of trade, assuming no compensating change in the velocity of circulation. Similarly, if prices were lower a smaller volume of credit would suffice. The theory of the deflationist is that by a restriction of credit and currency the price level can be forced down so that the same volume of trade measured in commodities can still be carried on, but at lower prices. The simplicity of the theory is very attractive. It has the satisfactory quality of an equation and is laid down as a self-evident truth. The misfortune is that the theory is not as exact as it seems and that when put into operation it does not produce the expected results. Let us see what are the effects of a restriction of credit and currency. It may depress prices; it may reduce the rate at which money circulates; it may diminish production. The degree to which any or all of these consequences may follow varies according to the conditions of trade at the time the restriction of credit occurs; but nothing is so certain as that falling prices or a lower velocity of circulation will have an adverse effect on the volume of production. It is at this point that the confirmed deflationist gets into difficulties. A decline in production increases the cost of manufacture and tends to arrest the fall in prices. In manufacture there is no law of diminishing returns. On the contrary, manufactured goods are produced cheapest when plant is running at 100 per cent of capacity, and, if the total of production is reduced, the cost of manufacture of what remains is immediately increased.

After an outburst of speculation based upon monetary inflation prices can be forced down again by a severe restriction of credit to the level, or even below the level, at which they stood before the speculative outburst began. Heavy trade losses and considerable unemployment will ensue but these are the temporary, though inevitable, accompaniments of a healthy reaction. When the effort to deflate is suspended trade will soon begin to revive. If the deflation be long-continued, however, its effect will show itself particularly in a lower scale of production. A further decline of the price level will then be arrested by the higher cost of manufacture, and the exceptional degree of unemployment will persist. This has been our experience during the last five years, when our monetary policy was governed by the declared determination to return to the gold standard at the earliest practicable moment. Immediate trade requirements and the exigencies of the dollar exchange were in direct conflict. It was impossible without an expansion of credit to carry a volume of trade sufficient to absorb the unemployed and provide for the natural growth of the population unless prices could be reduced; but the effort to bring down prices to the requisite level continuously failed of its purpose. It was frustrated by the natural opposition to a reduction in wages and by the high cost of production on a diminished output; it resulted in long-continued trade depression and excessive unemployment. That our endeavour after five years of effort has at length been crowned with success is a matter for sincere congratulation, but candour compels us to admit that the rise in the American price level has been the most powerful factor in our achievement. It is idle now to discuss whether the object in view was worth the price we have had to pay for it. Let us be content that the goal has been reached; and let us rest in the hope, for which there is good foundation, that we may reap the reward in the future.

Gold, the Controller of Credit.

I have done with the past five years and the influence on our trade of the monetary policy then pursued. I turn now to the future and am at once confronted with the fact that monetary policy has no longer the same free play. A new element has appeared. The movement of gold is once again playing a dominating part, and though its influence may still to some extent be mitigated by policy, in the long run the purchase or sale of gold by the Bank of England must be the controlling factor in the expansion or limitation of credit. As I have already mentioned, during the eight or nine months since the free export of gold has been allowed, we have worked under the temporary disability of an over-valued currency; but this condition is coming to an end. We have now reached a stage when we can form an estimate of the future based on the normal working of the gold standard.

If we accept the proposition that the expansion or restriction of credit stimulates or

depresses production, it follows that the movement of gold into or out of the country, which is now the principal factor in the supply of credit, must have a powerful effect on our trade. In forming an opinion upon the effect of the return to the gold standard the important question for us to consider is whether it is probable that we shall have to maintain high money rates and continue artificially to restrict credit in order to conserve our existing stock of gold, or whether the circumstances are such that we may reasonably expect gold to flow into the Bank of England without any effort on our part to attract it. The answer to this question must clearly depend upon whether the world's annual output is in excess of the normal demand.

Demand for Gold.

The expression "normal demand" in the sense I am using it needs some explanation. Gold may be bought by two kinds of buyers. It may be bought because it is wanted; it may be bought because the buyer has it thrust upon him. I describe as normal the demand for gold by those who want it. They may need it for purposes of currency or hoarding or as material to be used in manufacture and art. The annual output of gold, however, may be largely in excess of these requirements, and in that case another kind of buyer can always be found to take the surplus. The central banks in countries with a free gold market are obliged to take all gold offered to them at a fixed price in their own currency. Until last year, when we assumed this liability, the only country with a free gold market since the war was the United States. The Federal Reserve Banks there were bound to take all gold tendered to them, and having accumulated large gold stocks far beyond their internal requirements are to-day much more willing sellers than buyers. What will happen now in London remains to be seen; but in endeavouring to form an opinion as to the probable movement of gold in the future we cannot do better than take the experience of recent years as our guide.

The normal demand for gold is subject to considerable fluctuations. India is a very uncertain factor as a buyer. Germany has been and may be again in the market for every considerable amounts. Further, such fortuitous incidents as the high price of rubber create large temporary demands. As a result of such fluctuations the surplus bought by the United States has varied widely. To get a true estimate of the world's demands it is necessary to take a view over a fairly extended period, and I have, therefore, taken out the American import and export figures for the last four years. These show a balance of gold imports into the United States of over £130 millions, and we may conclude that over this period the average annual surplus above normal demand, after allowing for American commercial consumption, has certainly exceeded £25 millions. It is probable that the greater financial stability in Europe following the restoration of genuine peace conditions may increase the normal demand for gold and that the average annual surplus will not be as large in future as the figure I have mentioned. But in view of the increasing output of the mines, the existing surplus in America, and possible economies in the use of gold by central banks, I think it reasonable to anticipate that for some time there will be an excess supply which will have to be absorbed by the United States and England.

Credit Expansion and Trade Revival.

When we read in our morning paper that the Bank of England has bought gold, we have a comfortable sense of solid security. Such a purchase, however, has much wider results than the strengthening of the Bank's reserve, however advantageous that may be. The Bank pays for gold by a draft on itself, and the cost will sooner or later appear in its accounts as a deposit to the credit of one or more of the Clearing Banks. The Clearing Banks will have larger balances at the Bank of England. They will have more cash and will be able to lend more freely. Additional loans by the banks create more purchasing power in the hands of the public and a stimulus will be given to trade.

It follows from this that if there is a surplus of gold in excess of the normal demand, it will stimulate trade in the countries which have free gold market and are bound to absorb it. A remarkable example of this proposition has been furnished in recent years by the United States. While trade has been depressed here, it has with brief exceptions been extremely active in that country. They went through forced and severe deflation in 1921 in order to counteract the wild inflation which had overrun the world; and now and again since that time the financial authorities, alarmed lest the market was moving towards inflationary speculation, have temporarily adopted measures to counteract the effect of the purchase of gold. But, taking the period through, the excess import of gold has been

allowed in some degree to become the basis of additional credit, with the result that in the last four years the demand deposits of the reporting member banks of the Federal Reserve system have increased by 30 per cent *Prima facie* this large increase in public purchasing power might be thought indicative of inflation But if we look at the other factors in the American situation we find no serious ground for alarm During the same period there has been an increase of 11 per cent in employment in manufacturing industries, and an increase of nearly 40 per cent in production in basic industries In short the United States as a whole are enjoying very considerable trade prosperity, and the best authorities tell us that their prosperity is on a sound basis

Safeguards against Inflation

If then I am right in thinking that the present supply of gold is in excess of the normal demand part of the surplus will become the basis of additional credit in England and will stimulate trade and production here as it has done hitherto in America If the surplus is larger than is required for the needs of a healthy expansion inflation will ensue unless steps are taken by the Bank of England to prevent it Here again we have an example in the United States As I have already mentioned, the Federal Reserve Banks have thought it necessary to guard against inflation more than once in the last four years The principal measure adopted to counteract the effect of the forced purchase of gold was quite simple It must be remembered that just as a purchase by a central bank be it of gold or anything else increases bank credit so a sale reduces it The Federal Reserve Banks allowed their bills to run off and later sold investments as fast as the gold was paid in and thus stopped the growth of credit

It will be observed that this process was very expensive for the Reserve Banks Bills and investments are earning assets gold is not A continued replacement of bills by gold would have ended in depriving the Reserve Banks of all revenue, and they did in fact reach a point in 1924 when they were barely covering their expenses Since then their earning assets have been largely increased and the lean period has come to an end It is not impossible that the Bank of England might have a similar experience, but to the extent that the incoming gold was of American origin the movement could be easily arrested by action on the part of the British Treasury The exchange could be prevented from reaching gold import point by the purchase of dollars, to be utilized at the Treasury's option either in advance payment of instalments of the American debt or in the accumulation of United States Government Bonds This operation would involve little or no loss of interest to the British tax-payer and would have the added advantage of safeguarding the position of the Bank of England Any proposal to apply surplus gold to permanent use in this country such as additional backing to currency notes would be an unnecessary and costly proceeding, and should I think be rejected having regard to the heavy burden of existing taxation

It is not unusual for writers on the present day condition of England to discover signs that the productive capacity of our country in competition with other nations has passed its zenith They see in our figures of long-continued unemployment indications that we are no longer able to hold our former position and believe that the tendency in future will be towards a progressive decline in our trade These opinions are often expressed by persons who, though candid in criticism, are friendly in feeling They deplore what they regard as the passing of a great people I confess, however, that I do not share their opinion Through all these years of trade depression we have still been the greatest exporters of manufactured goods in the world Our trade has had to struggle against adverse conditions but its vitality has not yet been seriously impaired If these adverse conditions were ill of a permanent nature if they sprang from causes which marked a definite deterioration in our mental or physical capacity there might be some ground for anxiety about the future But I do not think this is the case There is always room for improvement, and I believe the years of depression have been a testing time for us and a warning to put our house in order The exceptional depression has been largely due to temporary financial conditions and for the reasons I have given I have strong hopes that these are now coming to an end

The needs of the playgoer who has tea and supper and wants a long evening's entertainment between these meals cannot reconcile with those of the fashionable people in London who dine at eight o'clock and want as much dress and as little drama as the pit and gallery will stand.—*Mr Bernard Shaw*

Co-operation in India.

By H. E. The Governor of Bombay.*

I am very glad to have the opportunity of being here to-day in order to inaugurate this important Conference of Registrars of Co-operative Societies. I see, amongst those present, not only Registrars from the various Provinces and important Indian States, but many prominent non-official Co-operators from several parts of the country. To all of you, including the Honourable Ministers in charge of Co-operation in other Provinces, whom I am specially glad to see, who have taken the trouble to come from long distances to attend these deliberations, I offer a most hearty welcome to our Presidency. As you are aware, these Conferences which met periodically from 1906 till the outbreak of the war, and only once since 1913, were, except in one instance, held at the headquarters of the Government of India, and this is, therefore, only the second occasion on which the Conference is meeting in one of the Provinces. It was a great pleasure to me and to my Government to invite you, through the Government of India, to meet in the Presidency of Bombay, and I am glad to see that you have been able to respond to our invitation.

It is, I am sure, unnecessary for me, in addressing those who have spent several years in the service of Co-operation, to say very much about the great benefits that the Movement has brought in its train to this country, or about its potentialities for the future. It was only twenty-one years ago that the first Co-operative Societies' Act was passed. I find from the proceedings of your first Conference, which was held two years later, that it was then thought to be too early to be sure of the eventual success of the Movement. If there was any doubt then, the passage of time has certainly removed it, and the Movement has undoubtedly taken as firm a root in India as in many other countries, and has been productive of splendid results, results which probably even its originators hardly expected it to achieve during so comparatively short a period.

The progress made by the Movement since you last met has been really most satisfactory, and, from its modest beginnings in 1904, it has now assumed very large proportions. I am not going to trouble you with too many figures, but the latest statistics available—these for the last year—though only provisional, are sufficiently accurate to give us a clear view of the growth of the movement during the last seven years. I find that while in 1917–18 the total number of Societies was about 26,500, last year it went up to 71,500, and membership rose, during the same period, from 10½ lakhs to over 26 lakhs. A more encouraging increase has been in the working capital, which rose from Rs. 14½ crores to nearly Rs. 48 crores. In short, while the number of members more than doubled, the working capital increased more than three-fold, and these are results of which you may well be proud.

While the economic benefits which have accrued from the Movement, as shown in these figures, have been substantial, its success is also important from the point of view of the social and political uplift of the masses. The importance of the principles of thrift, self-help and mutual aid, which the Movement inculcates, and the practical training which the management of a Society involves, cannot but be of great assistance in the social and political amelioration of the country. There can hardly be a better training ground than the successful management of a Co-operative Society for people aspiring to work a democratic constitution, whether it be for local or for national Government. It is on account of these far-reaching results which the Movement is capable of achieving that I have always taken a keen interest in its growth on sound lines, and I have been very pleased to observe, whether it be in the co-operatively advanced district of Dharwar, or in the Province of Sind, where the Movement has made rapid progress in the last few years, or in village societies like the one at Hadapsar, near Poona, the co-operative spirit gradually filtering to the masses, and not only improving their economic conditions, but raising the moral tone of the whole community.

Very seldom indeed had the Co-operative Movement to submit to such a severe test as it had to do during the war, but it stood that test very successfully, and it was conclusively proved that the principles on which it was based were essentially sound and of great benefit to the countries concerned. While so many institutions went, during the war,

* Speech by H. E. the Governor of Bombay in opening the Registrars' Conference, on January 12, 1926.

into the melting pot, Co-operation emerged not only unscathed, but stronger than ever. Not only did it prove its usefulness in various directions during the continuance of the war, but it has served as a very active agent of national regeneration since its conclusion. In almost every country engaged in the war, the Co-operative Movement is being used to rehabilitate the economic condition of the people. In India, too, its progress throughout the duration of the war was well maintained.

Since peace was declared, some important changes have been introduced, so far as the control of the Movement in this country is concerned. The subject of Co-operation has become a Provincial one and it is also a transferred subject, and it is only right, I think, that a subject so intimately connected with the economic and moral uplift of the people should be brought under the control of the representatives of the people. While, however, the subject has become a Provincial one, and while it is true that each Province has its own special features, and that the Movement has not progressed on the same uniform lines in the various Provinces and States of India, there are still several important matters of principal, as well as practice, which can be most usefully discussed in a Conference like this, a Conference of official experts assisted by non-official Co-operators; and I feel sure that nothing but good can come out of such discussion. The Conference gives an opportunity for interchange of ideas and discussion of problems and such interchange of ideas and discussion can be of very great practical use, not only to the various Registrars in charge of the Co-operative Movement in their respective Provinces, and their non-official helpers, but also to the Governments of the various Provinces. Such Conferences tend also to create healthy rivalry between the various Provinces, and to encourage progress on right lines. At a time when the Movement is becoming not only national but international, when international Co-operative Conferences and Exhibitions are being held, it is in the fitness of the things that the workers in the different Provinces in India should meet and discuss the problems in which they are all interested. I was, therefore, glad to the general unanimity with which our proposal to hold this Conference here this year was accepted.

You have a long agenda before you, containing subjects of considerable importance, and I should like to refer to only two or three items which seem to me to be particularly interesting. One of the subjects which you will be called upon to discuss is the institution of land mortgage banks. Such banks have been very successful, not only in Europe, but also in America, and there is no reason why, if organized on proper lines, they should not come into existence in India and confer the same benefits on the agriculturists here as they have done in other countries. The Co-operative Movement has now sufficiently established its credit to draw to itself enough capital for current agricultural needs. As regards long-term capital, the ordinary method of receiving deposits does not bring in sufficient capital to be invested, for instance, in long-term loans for debt redemption and land improvement. To obviate this difficulty in some degree, my Government has been helping the Co-operative Department for the last few years, by placing at its disposal from 15 to 18 lakhs of rupees a year for long-term loans for land improvement and for house building. This year we have gone a step further, and have declared certain areas, where Co-operation has well developed, as approved areas in which takavi loans for land improvement are distributed only through Co-operative Societies. The problem of providing loans, especially for debt redemption, can, I think, be more easily solved if land mortgage banks come into existence and are able to raise the necessary capital by issuing debentures. The subject has been under the consideration of Government and the Department in this, as well as in several other Provinces, and each, I understand, has evolved a scheme suited to its own condition. The discussion of an important problem like this, and of the various types which have been evolved, will certainly be of great practical benefit, and your opinion in this matter will, I have no doubt, be most helpful to the authorities concerned.

Another problem which is of considerable interest is the problem of Consumers' Societies, popularly known as Co-operative Stores. The store movement has been very successful, not only in England, but in various other countries in Europe, while it has on the whole made little progress in India. It cannot be said that there is no need for its growth in this country. It is certainly wanted in industrial areas like Bombay, but its success would undoubtedly be of great benefit to the rural classes also. I hope your discussion on the subject will be useful in laying down practical directions for the future organization and management of Consumers' Societies. In

conditions of success. In the first place, it must be made clear that the peasants have lands enough to get them mortgaged and secondly, that they understand clearly enough, and are prepared to act up to, the obligations of membership in a land mortgage bank. I am not acquainted with the condition of the Malnad raiyats but if the relative passages in the Report are any guide in the matter, these conditions are more or less absent in the Malnad area. From the report of the Economic Survey Officer, we find that "out of a total number of 287 families in 4 villages examined by him 214 families were landless and had Rs. 66,707 of debt and 73 families owned land and had debts amounting to Rs. 1,21,961". It would be of interest to know the purpose for which such mortgage loans were incurred, whether for improving cultivation by means of capital expenditure or whether it was merely a method of transferring land from the agriculturist to the absentee money-lending middleman, a process so much in evidence elsewhere. If the land mortgage takes place for the latter reason on any large scale, it is obvious that the benefits of a land mortgage bank are likely to be of doubtful value. Again, we read in the Report that the banks should not issue long-term loans for less than Rs. 500 to an individual. It is well known that land mortgage, banks are as a rule of benefit only to large landowners. It would be interesting to know how many large owners of this type are there to take advantage of the proposed provision. It is easy enough to get the working capital in the initial stages, especially in view of the fact that the State is called on to subscribe one-half of the debentures and guarantee the loans in other ways. But it is not so easy to make sure that the money lent out will come back to the bank. If all that is said of the Malnad landowner is true, *viz.*, that he is ignorant, conservative, improvident, superstitious and unenterprising, I am afraid that the essential condition of success of a bank of this type is absent and after a year of work the bank will have to be closed. I do not write this with a view to discourage the laudable attempt, but wish simply to sound a note of warning so that the promoters of the scheme may proceed slowly and cautiously. Unless the people are ready to take advantage of its provisions it is not advisable to spring upon them an elaborate and novel scheme of debt relief.

The main problem in Malnad, to my mind, is not so much to provide *for* the raiyat cheap and easy means of credit from the outside—though I do not wish to under-rate its importance—but to provide ample facilities to make him appreciate the benefits of a fuller and wider social and individual life. Education, and more education, is the crying need. It is satisfactory to note that the State has done much and is prepared to do more, but the appeal of the inelastic curriculum of the Department of Education is likely to be very limited in its scope. Moreover the expenditure, if it is all to be met by the State, will be out of all proportion to the results achieved. The more enlightened public in the plains owe a duty to their less favoured brethren in the Malnad. They may organize educational charity and help the people to help themselves. The State can do a good deal, but the people ought to be able to do more."

Tippoo Sahib's Treasure.

A London Correspondent writes.—An interesting relic of the Duke of Wellington and Tippoo Sultan has just come under public observation through the action of the vicar and church wardens of St. Stephens, Westminster, who have recently lent to the Victoria and Albert Museum a magnificent velvet, which is now exhibited in the Loan Court. It is a hanging of great size woven in seven separate widths, and is, in spite of the damage it has suffered, one of the finest Chinese velvets known, dating probably from the late K'ong Hsi period (1662-1722). It once adorned the tent of Tippoo Sahib, and was taken by the Duke of Wellington in 1799 at the capture of Seringapatam. The Duke gave it to the Baroness Burdett-Coutts, who in turn gave it to St. Stephen's when she built that church in about 1850. Since then the velvet has been suspended behind the pulpit of the church, exposed to all the disintegrating effects of the London atmosphere. Congratulations have been extended to the authorities of the church on taking steps to preserve this splendid and historic hanging.

The Government of Burma (Ministry of Education) have appointed an Education Advisory Board to enable the Legislative Council and the General Public to come into closer touch with the administration.



Lady Irwin



Raja Narendranath
President, Hindu Mahasabha



Mr. Kishandas Manmohandas Ramji

Indian Economic Enquiry Committee Report

Mr. R. H. COUTS, Dominion Statistician, Ottawa, Canada, writes to us under date 26th February 1926.—

I have your letter of January 2 (100-2) and shall read through the Report of the Indian Economic Enquiry Committee at the earliest possible moment. From a preliminary survey it appears full of much interesting material, with much of which I am in agreement.

Education in Industry and Commerce.

By P. A. Best,*

Managing Director, President of the Association for Education in Industry & Commerce, London.

The opinion of the more enlightened leaders in industry, in education, and in political Government on the subject of technical education is in striking contrast to the *laissez-faire* methods of most employers.

Like most great movements in social reformation, this modern movement for the education of the employee by the employer—or with his active co-operation—was set on foot by the magnificent example of two or three public-spirited individuals who have proved conspicuously its success when adopted by their own firms, and have thus fired the trail for others.

For a number of years now, far-sighted schemes, not merely for the technical training but for the general education of their workers, have been consistently carried out by several large industrial concerns, whose names are household words throughout the Empire, and largely through the results achieved by these pioneers a new public opinion is being formed as to the responsibility of employers in regard to the efficiency of those they employ.

The case for industrial training rests on three main grounds :—

(*a*) The advantage of the business.

(*b*) That of the employee.

(*c*) That of the State.

It is difficult to say which of the three benefits the most if the employee is properly trained, or which suffers most if he is left to pick up his job without guidance.

The plight of the untrained employee is only too obvious. If in return for a day's work he receives nothing but a wage, if nothing is done to stimulate his interests, to develop his powers of mind and eye and hand, he soon falls a victim to the blight of arrested development. He gets through his day's work somehow, from a sense of duty, or from fear, as often as not actively disliking it, certainly deriving from it no joy or pride or satisfaction. Picking up his duties—often monotonous duties—by simple imitation from those around him, he becomes acquainted with a few unrelated and apparently objectless actions, and often fails to acquire that skill, precision and speed which are themselves interesting. Being liable to summary dismissal, he then finds that the long hours spent in toil have not benefited him. He has learnt nothing which he can apply elsewhere. Apart from his wages he has nothing to show for those months or years of so-called experience. He has not learnt to think, or to appreciate, or to handle with skill. Even if he holds his position indefinitely there is still very little hope of his distinguishing himself in a way to secure promotion. His leisure hours, instead of being complementary to the day's work, will so compete with it in his mind as to withdraw all his interest from the biggest part of his waking life. Pleasure—the pleasure of relaxation and inaction—becomes his god, the sense of service becoming entirely obliterated. Work and play are to him not the good companions they should be, but antagonistic—the one and unmitigated evil, and the other the only good. I believe I am in no way exaggerating the unfortunate condition of the average untrained worker. He is a blot upon our civilization—a blot which in no sense is inevitable in a State such as ours.

Now the business which fails to train its employees is courting disaster for itself also. This fact is true all branches of industry and commerce, that is to say, of all business concerns which finally depend for their success on the excellence of those who labour in them—on quick intelligence and energy of mind, on stout hearts and clever hands, on the powers of leadership and of loyalty, on health and happiness. If there is a single manufacturing firm, or a merchant's office, or a distributing business which need none of these things, then it alone can afford to neglect the training of its employees. *All* firms want skilled persons of some sort. It is almost true to say that no process in industry is really unskilled. The very lowest forms of annual labour are, from the point of view of speed at least, the result of training and aptitude, and can be greatly improved and the labour greatly lessened by the adoption of properly investigated methods.

Staff training is not a trimming. It is vital necessity. Industry has as much reason to see that facilities for education are provided for its workers as it has to see that oil is provided

* Speech delivered at University College, London, on 7th June 1921.

for its machines. Any industry which reckons to be paying its way should include the instruction of its employees as an important item of creative expenditure—creative, because money wisely spent on education justifies itself many times over in increased efficiency, health and good morale. Not that an immediate financial return is to be looked for by the employer who spends money on education schemes. Education brings sure but not quick results. The long view must be taken by all experimenters of this sort, and the employer who is not capable of taking the long view will be disillusioned. Yet the alternative to a scheme of training is slow work, spoilt work, decreased good-will, lost business—an enormous aggregate of loss if it could possibly be computed. It is surely wise for a business to spend a small percentage of its profits in preventing its life being choked by ignorance, incompetence, and internal discord.

But closely as this question affects the individual employee, seriously as it reacts on the employer, the State is surely not without grave responsibility in the matter. Nothing which tends to lower the civic value and personal welfare of millions of citizens can be considered as nothing to do with the State. It is an encouraging sign of modern progress in thought that two important inquiries are being held at the present time—an official one conducted by a Committee appointed by Lord Eustace Percy, and an unofficial one undertaken by the Committee of which Lord Emmott is the Chairman. The former, presided over by Mr. Malcolm, Chairman of the Board of Education Committee, a distinguished scholar, business man, and Civil Servant, sets out "to enquire into and advise upon the public system of education in England and Wales in relation to the requirements of trade and industry, with particular reference to the adequacy of the arrangements for enabling young persons to enter into and retain suitable employment". The un-official Committee is seeking "to enquire into the relationship of technical education to other forms of education and to industry". I understand that these two Committees are closely co-operating in their researches. Their findings will be eagerly watched for by members of this Association and by many other interested people. *Of course* the State is concerned! If the majority of employers do not see how they themselves are damaged by the lamentable results of human inefficiency, then surely a day will come when the State will consider itself obliged to safeguard the nation from their short-sighted selfishness. The State has a two-fold responsibility—to the employers themselves and to the public. Why should pauper industries be allowed to operate—those casual-labour industries which can only exist on their present basis by throwing on the rate-payer and tax-payer the burden of keeping alive a large proportion of the labour indispensable to them, during large parts of the year when they are thrown out of work? This is only one way in which the public pay very heavily for the delinquencies of selfish employers.

Granted that both employers and the State are under serious obligations to see that citizens are trained to become efficient employees, and employees to develop into good citizens, and indeed are courting disaster if they do not do so, it is not desirable at this stage to dogmatise as to the exact fashion in which they will co-operate in bringing about the desired results. For we are still in the experimental period. But this I would like to say—that in our opinion a young employee should not have to depend for his technical instruction on evening classes. Time should be set apart by the employer for this during working hours. It is monstrous that a boy should be called upon to do two days' work, one after the other—that after he has finished earning his living during the day he should be expected to spend his evenings in instruction connected with his trade. If he attempts to do so he, of course, unfits himself by weariness for both his work and his study. An opportunity must be given for developing the natural instincts and abilities which exist in, at any rate, a large proportion of all ranks of society. Evening schools have played, and still play an admirable part in the education of those adults who wish to continue to develop their minds and increase their culture after leaving school, but employers should surely not regard them as convenient institutions designed by Providence to relieve them of all responsibility for the technical training of their employees.

I hope the day will soon come when the State will insist that firms must make up their minds which of two—or what combination of two—policies they propose to adopt:—

(*a*) To pay for having this training done before they enter industry at all; or

(*b*) To set aside working hours for it.

For we shall certainly not make headway as an industrial and commercial nation by shirking responsibilities which have become very clear to us.

Japan and India's Cotton Mills.

A serious question which is engaging the attention of the Bombay Millowners' Association at the present moment is the very rapid growth of the imports of Japanese Yarn and piece-goods into this country and the very detrimental effects thereof on the indigenous industry.

Judging from the statistical and other official publications it would appear that this very serious menace to the Cotton Industry of the country is frankly recognized by Government. For the last two or three years, the Annual Official Publication of the Government of India known as "Review of the Trade of India" contains frank admissions by Government of the severity of Japanese competition. Again, in the "Report on the Sea-Borne Trade and Customs Administration of the Bombay Presidency" for 1924–25, published some time back, it was stated :—

The Japanese Mill Worker.

"Japanese competition was severe and in certain instances Japanese goods were offered at prices lower than the cost price of similar goods manufactured in India. The Mill Industry is suffering from the unfavourable rate of exchange with Japan and highly organized Japanese competition. The Japanese Mill-worker appears more efficient than the Indian Mill hand, while the system of night and day working of their Mills combined with factory law restrictions believed much less strict in application than those of India, reduces cost of production. These and other factors counterbalance the advantages which 7½% net protection and the absence of the double freight charges give the Indian Mills. The abolition of the small cotton excise duty of 3½% would probably not make much difference as regards the competition of Japan."

What strikes one most in considering the growth of Japanese competition is the amazing rapidity with which her imports into India have gone up. It is not proposed to overburden this article with statistics but it may be broadly stated that in 1914–15 the total imports of Japanese Yarn into India were less than a million pounds while in 1924–25, *i.e.*, about ten years later, the quantity imported was *more than* 32 *times* the figure of 1914–15. Again, in piece-goods, the quantity imported in 1914–15 was about 16,000,000 yards, while in 1924–25 it was about ten times that figure.

Japan's Advance.

The under-quoted figures of imports of Japanese piece-goods into this country during the last five years show how rapidly these imports are increasing :—

000's omitted in each column.

Year	Quantity in Yards.	Value in Rupees.
1921–22 ..	90,275	36,792
1922–23 ..	107,778	42,490
1923–24 ..	121,902	45,945
1924–25 ..	155,302	57,463
1925–26 .. (9 months).	154,910	49,980

It is this rise every year in Japanese imports which disturbs the minds of everybody who has a stake in the Cotton Mill Industry of the country. If the Japanese imports go on increasing at the present rate, one cannot contemplate with equanimity the plight in which the Cotton Mill Industry of the country will find itself in about five or six years' time.

It has, however, been alleged that the competition which the Indian Cotton Industry is meeting from Japan is insignificant, and in support of this statement statistics are adduced to show that the imports of Japanese goods into this country form a small percentage of the quantities produced by Indian Mills, and it is stated that this small percentage cannot have any appreciable effect on the indigenous industry. There is a three-fold fallacy underlying this argument.

The First Fallacy.

The first fallacy is pointed out in the following extract from the London *Times* :—

"The question of Japanese competition cannot be judged by a mere mention of her present proportion of the total Indian Cotton Trade. Her advance is best estimated by considering the remarkable progress made since pre-war years."

If the present imports be not deemed sufficiently large to have any detrimental effects on the cotton industry of this country, an altogether erroneous assumption as pointed out further on in this article, still can it be maintained, in the face of the tremendous increases in the imports every year, that no action is called for to check this annually increasing growth ? Can it be maintained that no action should be taken until the imports have become sufficiently large to kill the indigenous industry?

The Second Fallacy.

The second fallacy underlying the argument quoted above is that it takes no account of the

effects of Japanese competition on the export trade of this country. It is forgotten that not only is Japan dealing severe blows to Indian manufacturers in Indian Markets, but she is making rapid inroads in the foreign markets of the production of the mills of this country. Japan has already ousted India from the Chinese markets with which India was doing a great and profitable trade in yarn. Similarly, the Chinese market is practically lost for Indian piece-goods. In the words of the "Administration Report of the Bombay Presidency" for 1923–24 :—

"Since 1917, China has been practically a closed market for Indian piece-goods owing mainly to the expansion of the indigenous textile industry and to the rigour of Japanese competition."

India has practically lost her export trade in yarn, and since this yarn has to be necessarily utilized in manufacturing cloth, it is of the utmost importance to develop the foreign trade in Indian mill-made cloth, but here again Japan with the unfair advantages she is enjoying over India is proving a very formidable rival, for not only has she ousted India from the Chinese market but is rapidly capturing the other foreign markets of India, *e.g.*, Egypt, South Africa, etc.

The Third Fallacy.

But the greatest fallacy underlying the argument that Japanese imports are too insignificant to have any adverse effects on the indigenous industry is that it entirely overlooks the all-important question of the prices at which the Japanese goods are sold in this country. It is a well-known fact—endorsed by the "Report of the Sea-Borne Trade of the Bombay Presidency" quoted previously that Japanese goods are being sold in the Indian Markets at prices which are very often less than what it costs Indian Mills to manufacture identical goods. The result is that Indian Mills find it impossible to sell their production at a profit. Whether "Dumping" in the usual sense of the term is taking place or not it is difficult to prove but there can be no doubt that 22 hours' working in double shifts, depreciated exchange, etc., enable Japanese manufacturers to sell their goods in this country at or below the cost of manufacture in Indian Mills. It is these unfair conditions of Japanese trading that are sapping the life-blood of the indigenous industry, and that call for immediate remedial measures if the indigenous industry is to be saved from ultimate ruin.

Japanese Methods.

One of the most characteristic features regarding Japanese competition is that the Japanese select particular descriptions of goods which are manufactured in India in comparatively small quantities. This serves to lower the prices of those particular descriptions and this reacts on prices all round. This accounts for the fact that although Japanese imports are a small percentage of the quantity manufactured in Indian Mills, the competition is none the less extremely acute. At present the very great bulk of the Japanese importations is confined to three particular classes of grey goods, namely, drills, a special type of grey longcloth, and sheetings, and in these lines the competition is severe enough to kill the market for Indian and English goods of like quality.

In connection with the International Exhibition to be held in the City of Philadelphia from June to November 1926 in celebration of the 150th anniversary of the signing of the Declaration of Independence, the Taj Mahal Trading Company, Ltd., has formed a small committee and invited representative Indian exhibitors at Wembley to join it, in order that an Indian exhibit might be organized. Plans for a pavilion of typical Indian architecture with a covered area of some 30,000 square feet are in preparation and all details, form of application for space, etc., can be obtained from the Taj Mahal Trading Company, whose registered offices are at 17, Bedford Road, London, W.C.1, or from the local representative of the Advisory Committee Mr. U. Master, Messrs. Pohoomul Bros., Apollo Bunder, Bombay. All articles in the Indian pavilion must be of Indian origin and the Trading Company have agreed to adopt rules and regulations almost identical with those framed by the British Empire Exhibition authorities and laid down by the Government of India.

From a financial and commercial point of view "Safety First" is a work that is worth doing ; from a human point of view no measure or balance sheet can adequately represent all that it means.—*Mr. J. H. Thomas, M.P.*

Of present-day conversationalists I have known, I should put Mr. Lloyd George first at breakfast, the late Mr. Massingham at luncheon, and Mr. Balfour at dinner, and Mr. Augustine Birrell, of course, first and last and all the time.—*Mr. F. G. Masterman.*

Bombay Department of Industries, 1924-25.

By the "Bystander".

The post of Director of Industries was abolished as a result of the vote of the Legislative Council in March 1924. Thereafter some of his activities were carried on by the Assistant Director under the designation of Superintendent of Industries. The post of Director was, however, revived in July 1925. The activities of the Department were :—

(1) Supply of commercial intelligence to private enterprises.

(2) Professional or technical advice and assistance to minor industries.

(3) Demonstration in cottage industries, especially in weaving.

The unusual depression in trade continued throughout the year but owing to the rise in the exchange and fall in the prices of machinery four cotton spinning and weaving mills were projected at Barsi and one at Sholapur. The New Oil Mills, Bombay, the largest of its kind in the Presidency, stopped working owing to financial stringency, and the oil mill industry, like the textile industry, did not show signs of extensive development. The report contains information regarding some of the new industrial ventures.

Two large works have lately been established in the Presidency, one at Satara and the other at Bombay, for manufacturing machinery suitable for agriculture and small industries.

There are now 14 match factories in this Presidency, seven of which have been established in the suburbs of Bombay with an approximate total output estimated at 30 to 40 lakhs gross boxes annually. Three or four factories use indigenous wood but the remainder import and use match wood splints from foreign countries. The imported wood in 1924-25 was valued at Rs. 4,38,000.

The Director of Industries visited several places in the districts to give technical advice and a large number of people called and consulted him on industrial and technical matters. Various enquiries by post were also answered. Some of these related to selection of power plants for new factories, the lay-out of machinery, defects in machinery, water softening plant, pumping water, scheme for a technical school for Mahomedans, reorganization and lay-out of the workshopsat a technical school, etc.

Four applications were received during the year requesting financial help from Government through the Department. One application was from a very large industrial concern asking for a loan of several lakhs of rupees and offering their whole property as a mortgage to Government, but as the industry that was carried on by the concern was not a nascent one and as the concern could have easily secured a loan from a bank or private financier nothing could be done in the matter. The applications of two other firms could not be considered as they were not willing to offer their property by way of security while the fourth application is still under consideration. A loan of Rs. 15,000 was sanctioned to an industrial concern in Surat in 1923.

The hand-loom industry is expanding. The Department is paying particular attention to helping and reviving this industry by demonstrations and by the introduction of improved methods of hand-weaving. There were in all five schools engaged in demonstrating fly-shuttle looms. They were at Parola (East Khandesh), Pathardi (Ahmednagar), Bijapur, Betgiri (Dharwar) and Sinnar (Nasik). The Sinnar school was transferred to Vinchur in November 1924. The number of fly-shuttle looms introduced numbered 580.

At the suggestion of the Provincial Board of Agriculture the experiment of training agriculturists to take up weaving as a spare-time occupation was carried on in Hoshalli (Dharwar District) till April 1925. After having introduced about a dozen hand-looms amongst the agriculturists there, the school was transferred to Bonkanhalli (Belgaum District) on the Agricultural Farm of Mr. V. S. Phaterpekar. There are eight looms working in the school and pupils—agriculturists only—from surrounding villages attend the school. They are taught to weave plain cloth such as gudar, khadi, dhoti, shirting, etc.

As regards Gujarat, three schools were opened at Surat, Broach and Bulsar and demonstrations given at three different centres.

Why is it that a lower standard of habitual truthfulness is alleged to prevail in politics than in the world of science or of business?, —*Mr. Baldwin.*

There is enough money in London traffic properly co-ordinated to ensure each of the undertakings a reasonable return upon their capital.—*Sir Henry Maybury.*

Madras Labour Department, 1924-25.

By A. S. Venkataraman, B.A.

The Administration Report issued by the Department for 1924–25 is in many ways an interesting document. If its record is not quite as interesting as the Bombay Labour Office, it is nevertheless satisfactory. The important channels of its activity have varied from investigations into Labour disputes, attempts at seeking remedies, attempts to improve the economic and moral conditions of the depressed classes, their education and their sanitation to the reclamation of criminal tribes. The report has enclosed a statement showing the strikes, numbers involved, duration, cause and results of the dispute. An examination of these shows that seven out of the fourteen strikes were due to scavengers, cart-drivers and drainage workers in Municipalities, three were organized by textile workers, two by railway-men, one by boat-men and one by agricultural labourers. The strikes worth the name except for the railway-men at Podanur have been few and far between. The Department's work in this direction is almost a negligible factor when compared to the other provinces. That is so in the Province of Madras is self-evident in view of its not being industrialized. The one noteworthy feature in emigration has been the repatriation of the labourers in Assam recruited from the Ceded Districts. It became the subject-matter of an enquiry by the Commissioner and a discussion by the Legislative Council with the result that though emigration was not completely stopped, a protest was entered against it.

That the Department is nothing, if not the guardian, as it styles itself, of the interests and the welfare of Adi-Dravidas and Adi-Andhras. No wonder, therefore, that its efforts have been concentrated on their economic and therefore the social amelioration. Two hundred and eight acres of Patta land were acquired for use as building sites and distributed among three thousand, six hundred and seventy-four applicants. The co-operative movement received a great impetus, three hundred and thirty-four societies having been formed in the year for the acquisition of house sites, for advancing loans to members and for joint cultivation, joint purchase and joint sale of stores—a noteworthy feature being, the formation of societies for relieving the distressed, caused by the flood. 166 new schools were started and the system of scholarships and fee remissions extended. Among the features of special interest are the general relinquishment by the caste people in favour of the depressed classes in Bellary, the vigorous efforts of the Collector in South Canara for acquiring lands for house-sites in Mangalore, flood relief measures in Trichinopoly, loans to co-operative societies in the Madras City to enable the tenants in cheris to purchase the sites where houses have been built, efforts to house 600 Adi-Dravida families, loans in Tanjore for the construction of houses destroyed by the floods, lease societies for cultivating Padugai lands, societies in Kistna and Guntur for leasing lands at concession rates without public auction. Again South Canara takes the lead in enrolling women members and non-credit work (purchase of food-stuffs wholesale and supply at cheaper rates).

In extending educational facilities to the depressed classes, the Government has not been less forward. 116 schools were opened in the year bringing up a total of 656 schools being manned by 683 teachers. Among the important grants, the opening of a hostel at Madras, scholarships, general and industrial, deserve mention. Along with educational facilities, sanitary improvements have been effected at a cost of about two lakhs.

Far more than these, the efforts to reclaim kallars in Madura, Ramnad and Tanjore have been laudable, while the progress in the eight criminal settlements has been fairly satisfactory. This aspect of the work is in consonance with the modern ideas of reforming the criminal and making him a better man. Not only that, as they are obliged to live in families, their children are being weaned away from an environment and influences which are otherwise bound to be baneful to the society and the nation. It is satisfactory to note that this notion is steadily winning recognition.

In general, the Department is temporary and is attempting good work. Though it may not be possible for us to measure the advantages in terms of rupees, annas and pies, figures regarding the expenses of the Department might have been appropriately and profitably appended. Then it will be possible for any one to form his own opinions as to the *raison-d'etre* of the office. The labour office in Madras

pales into insignificance beside the labour office in Bombay. Enquiries into local prices and cost of living in Bombay, statistics of wages, rent, etc., are conspicuous by their absence in Madras. The collection of family budgets as a key to the study of social conditions so largely adopted by the Bombay office is yet to come. The collection of labour intelligence pertaining both to India and foreign countries, a forte of the Bombay labour office, is an unknown avenue to the Madras compeer, and the medium of communication of new and current ideas in the well-known labour Gazette of Bombay, is a language still to be learnt by the Madras babe. The Bombay Labour office is not merely an agency concerned with the collection of a few elementary statistics, but a repository of all information relating to labour, industrial and commercial matters. It is the true friend, philosopher and guide of the labourer. That the Madras Labour Department will function in a similar manner is a consummation devoutly to be wished for.

India's Railways, 1924-25.

By "Scrutator."

The Report by the Railway Board on Indian Railways for the year 1924–25 is one of more than ordinary interest. During the year, trade showed a distinct revival and the improved conditions throughout the country had a decided effect on the gross earnings of railways which reached a figure higher than ever before recorded. The various administrations without exception have handled this additional traffic at a cost which represents a substantial lowering of the operating ratio.

Separate Railway Budget.

The most notable event of the year was the acceptance by the Legislature of the scheme for the separation of railway finance from the general finances of the country. Following on this acceptance the Railway Budget was prepared separately for the first time and was introduced on 20th February, 1925, by the Hon'ble Railway Member in the Legislative Assembly and by the Chief Commissioner of Railways in the Council of State. The new procedure has already resulted in a definite improvement in the railway outlook, and while the general revenues are now assured of a stable annual return from railways, the Railway Board is enabled to carry out a continuous policy of improvements based on the responsibility for obtaining a fixed dividend coupled with an assurance of adequate funds for any operation which will secure such dividend. They have the further security that surpluses will be available for railway purposes and particularly for building up reserves and a depreciation fund. Considerable progress was made with new construction, and although only 233 miles of new railway were opened for traffic at the close of the year, there were 1,201 miles under construction, representing a programme which, when completed, will result in an addition of some 2,285 miles to the present system.

E. I. Ry. now a State Railway.

Following the decision of Government referred to in last year's report, the management of the East Indian Railway was taken over from the Company by the Railway Board on 1st January, 1925. The arrangements which had been previously made for the transfer of the staff to Government service enable the transfer to be made smoothly and without any change in the services rendered to the public.

During the year the reorganization of the North-Western Railway, the East Indian Railway, and the Oudh and Rohilkhand Railway, on a divisional basis was carried into effect on the lines indicated in the report for last year.

The First Indian Electric Railway.

The opening of the first electrified railway in India—the new Harbour Branch of the Great Indian Peninsula Railway at Bombay—on 3rd February by H. E. the Governor of Bombay was one of the notable events of the year for Indian Railways. This work is the precursor of the introduction of electric traction on a more extended scale both for suburban traffic and for long distance traffic.

The total earnings of all railways increased by the phenomenal figure of nearly 7 crores, *viz.*, from Rs. 107.80 crores to Rs. 114.75 crores. This figure of Rs. 114.75 crores, however, includes railways owned by Indian States and Companies for which the Government of India has no direct financial responsibility.



Seth Lalji Naranji, M.L.C., J.P.

President, Indian Merchants' Chamber, Bombay

Financial Results.

After meeting all interest charges, Government received a net profit of Rs. 13.12 crores as against a profit of Rs. 6.47 crores in 1923-24. On the Capital at charge of the State lines, the net receipts, that is, the gross receipts *minus* the working expenses, have in recent years given the following return :—

	Per cent.
1913-14	5.01
1921-22	2.64
1922-23	4.38
1923-24	5.24
1924-25	5.85

Economics in the West.

Balance of Trade and Shipping.

London, Feb. 13, 1926 :—The annual meeting of the Chamber of Shipping was the occasion for a remarkably interesting address by the new President, Mr. Walter Runciman, who discussed very lucidly the vexed question of the balance of trade. He laid emphasis on the fact that it is our foreign trade as a whole which enables 44 millions of people to live in Great Britain, and pointed out that without it the country could hardly support 20 millions. His explanation of the important part played by the shipping trade in preserving the balance between imports and exports led him naturally to the point that the capitalist system is a direct outcome of individual enterprise which enables international trade to be carried on. The State has never created a single item of foreign trade and never organized a single foreign service, while the experience of State ownership of shipping in other countries is quite enough to show that State enterprise in shipping leads not to profit but to loss.

Mr. Runciman showed that the abolition of the capitalist would entail the disappearance of the oversea investments of individual capitalists which provide a net income of roughly £250,000,000 per annum. The merchants, too, who as a class are so frequently attacked as profiteers and middle-men, play their part and, as Mr. Runciman pointed out, perform an absolutely essential service in the process of the exchange of goods and the provision of supplies. Through commissions, etc., overseas, the brokers and merchants are responsible for £40,000,000 of invisible exports. Altogether invisible exports amounted last year to £429,000.000, which State Socialism would wipe out. Mr. Runciman drew attention to the curious fact that the cost of food from abroad, £572 000,000, is a sum not greatly in excess of £429,000,000, which represents invisible exports.

Imports and Exports.

In a recent article Sir Josiah Stamp wrote that it seems indubitably true that "every import bears an invisible order for an export tied round its neck," a statement difficult to reconcile with the returns of foreign trade for recent years. If it were true, increased import should entail increased export, whereas in fact, while in recent years imports have been increasing, exports have declined. Nor have we ever been able to see any reason for regarding import as the first movement. Obviously in the beginning some country had to export before any country could import, and if instead of regarding imports as orders for exports we always regarded exports as being the first step to obtain imports, we should see that decline in exports must sooner or later lead to a reduction in imports through incapacity to pay for them. It does not follow that this will be the immediate effect of reduction in exports, because as a result of favourable trade balances over a long period this country now possesses buying power abroad that will enable her to stand an adverse trade balance for some years.

According to Sir Josiah Stamp's theory each little import has its order for an export tied round its neck when it arrives. It is not unreasonable to ask what will happen if those orders are not executed. Will the supplying countries get tired of sending us goods for which they receive less than their value in return, because, curiously enough, although Sir Josiah Stamp assumes in the case of this country that imports come first and that they are paid for by exports, in the very same article he assumes that exports precede imports in the case of a foreign country. He writes : "It may be that the foreigner is poor and cannot send 4,000 units with which to buy 4.000 from our nation A." Why the difference ? There is no more reason to assume that imports come first in the case of one country than the other, but though the point is not in one sense important, it is in another because if we assume export to precede import this line of argument falls to the ground.

Your Income tax.

Some time ago there was a suggestion that an analysis should be made showing exactly how the income-tax was spent. The idea seemed well worth adoption, and we publish below the results of a calculation made by a competent authority, which is most instructive.

Taking the expenditure for 1925-26 at £310 millions,* and deducting the cost of the Road Fund and the Post Office, because the former is raised by a definite tax and allocated to a specific purpose, while the latter makes a profit, and also deducting other receipts from non-tax revenue (Crown Lands, interest on loans, and ordinary and special receipts), the round figure of £678 millions represents other public expenditure. Income-tax and supertax for the year amount to a round figure of £325 millions, or more exactly to .479 of the expenditure included in the calculation.

Working on these figures, it is possible to show what proportion of every £100 raised by income-tax and supertax is devoted to each branch of expenditure. The result is as follows:—

	£.	s.	d.
Consolidated Fund Services—			
National Debt Services	48	8	0
Payments to local taxation accounts ..	1	16	4
Land Settlement	0	2	0
Other Consolidated Fund Services ..	0	16	4
Supply Services—			
Army	6	1	4
Navy	8	5	0
Air Force	2	2	3
Customs and Excise	0	12	11
Inland Revenue	0	18	3
Civil Services—			
Royal Palaces, Parks, etc.	0	1	0
Revenue buildings	0	3	9
Labour and health buildings	0	1	5
Public buildings	0	4	10
Rates on Government property ..	0	4	11
Other works and buildings	0	3	1
Ministry of Agriculture	0	7	9
Home Office	0	1	2
Foreign Office	0	0	7
Board of Trade	0	1	9
Department of Overseas Trade ..	0	0	11
Mines Department	0	0	6
Secret Service	0	0	6
Other Civil departments	0	18	0
Police (England and Wales)	0	17	5
Prisons, etc. (England and Wales) ..	0	3	9
Other law charges	0	10	9
Education	6	6	8
Science and art	0	6	11
Diplomatic and Consular	0	3	0
Colonial	0	3	4
Middle Eastern	0	13	0
Other Foreign and Colonial	0	1	8
Ministry of Pensions	9	0	0
Old Age Pensions	3	13	3
Ministry of Health	2	13	3
Ministry of Labour	1	17	10
Miscellaneous Civil Services (unclassified)	0	7	10
* Coal subsidy	1	7	4
Other Supplementary Estimates ..	0	1	8
Total ..	100	0	0

* Note.—Since the above calculations were made an additional £9,000,000 has been allocated to the coal subsidy, bringing the total subsidy to £19,000,000.

It will be seen that essential services, including debt, pensions (war and old age), army navy, air, and police, amount to £78 7s. per £100. Fractions of a penny have been disregarded.

Use of Cast Iron.

A paper on cast iron and modern engineering practice was presented at the last meeting of the Institution of Mechanical Engineers by Mr. J. G. Pearce, the Director of the British Cast-Iron Research Association.

During the last few years, he said, a remarkable change has taken place in the development of cast iron. The commonest and cheapest of all structural ferrous materials, it has always been metallurgically neglected, and its replacement by competing ferrous and non-ferrous materials in engineering practice appeared formerly to be only a question of time. To-day cast iron is regularly produced in foundry cupolas from a wide variety of raw materials with great consistency and economy. Certain applications which had temporarily been usurped by steel and other materials are reverting to cast iron, and in some departments, notably in internal combustion engineering, the development of the material is keeping pace with the growing demands of the engineering designer. The reason for this change is that metallurgical knowledge and experience, formerly almost exclusively devoted to steel and certain non-ferrous metals, is now being applied to cast iron; and this movement is taking place in all the principal industrial countries. Undoubtedly it had its origin in certain war-time conditions, which compelled founders to exploit much more fully than usual both the limited raw materials at their disposal and the resources of foundry practice.

The metallurgical characteristics of cast iron are beginning to be understood in such a way as to bring the complete scientific control of its production within the range of practical politics. The developments appear to lie along the following lines: The introduction of special irons for particular purposes having such qualities as will win for them either new

fields of application or, by virtue of their cheapness, fields now dominated by other materials; the development of specialized foundries concentrating on particular qualities of iron; improvements in moulding materials and melting practice leading to greater certainty and economy in production; the continuous application of research for the purpose of revealing more regarding the inner structure and properties of cast iron and the manner in which the information so revealed may be applied in practice.

The iron-founding industry is taking steps to make engineers much more satisfied with both the specific properties and general homogeneity and uniformity of cast iron by the establishment of national specifications and standards. As designers, as users, as foundry owners, engineers have it enormously in their power to facilitate these steps, and their ready acceptance of the experimental method in engineering development should enable them to do this without difficulty.

Great Britain is favoured in possessing the greatest resources in skilled men and managers. The country lacks opportunities for the installation of labour-saving equipment on a large scale as is common in the United States, and is far behind Germany in painstaking technical investigation. There is danger that this country in a basic industrial process may have to pay tribute to America and Germany for developments in the processes they have made their own, unless the industry can ensure permanent provision for similar work in this country. There is every reason to believe that, with such provision, in iron-founding Great Britain could take the lead by virtue of a close combination of theory and practice.

The Origin of Tea.

Many fabulous stories are told as to the origin of tea, the most daring of which suggests that it was known as a beverage in China in the time of Chi Nung, 2737 B.C. What appears undoubtedly to be a reference to it occurs in *She King*, a classical work compiled by Confucius about 500 B.C., yet it is probable that it was only in the 6th century of the Christian Era that tea became a beverage on any important scale in China. In 780 A.D. Lo-yu, a learned Chinese author who lived in the Dynasty of Tang, wrote a charming little dissertation on tea.

Modern advertisement writers, seeking to extol the virtues of tea as a beverage, might do worse than draw upon this ancient work, as the example of this one sentence will show: "Tea tempers the spirits, harmonises the mind, dispels lassitude and relieves fatigue; awakens thought and prevents drowsiness, lightens and refreshes the body and clears the perceptive faculties." Could a modern put the case better? asks Mr. Robert O. Mennell in his book, *Tea: An Historical Sketch.*

Though reports of tea as a Chinese beverage had been received from Portuguese sources as early as 1517, the credit for its introduction from China into Europe belongs to the Dutch East India Co., which imported a few pounds into Holland in 1610, and into England in 1645. It was not apparently until 1669 that the English East India Company brought its first consignment, two canisters weighing in all 143 lbs., from Bantam.

Mr. Robert Mennell, who is a partner in a Quaker firm that has been studying tea for seven generations, has just put some of his family lore into an admirable history of tea, says the *Manchester Guardian* review of the book.

Should a hundred million people begin to take tea seriously, there will be lively times in London, which still remains the world's central market of tea, as it was when Mr. Mennell's ancestors loaded it on pack-horses and sent them trudging up the Great North Road to York, and on by stages to refresh the Scot.

Water Power Exhibition at Basel.

The arrangements for the International Exhibition of Inland Navigation and Water Power which will take place at Basel from July 1 to September 15 next are proceeding actively. Nearly all the big Swiss manufacturers, as well as the Federal Railways Department, have agreed to participate. Amongst foreign countries, Belgium, Germany, France, Holland, Italy, Yugoslavia, Austria, and Czechoslovakia are also making a display. Negotiations are being carried on with Canada, Great Britain, Norway, Sweden, Hungary, and the United States with a view to obtaining their support.

In France the Government has appointed a Special Committee for this exhibition. France, Germany, Holland, and Italy have all taken space for a display by their respective Governments and private firms. The Transport Committee of the League of Nations and the International Labour Bureau will also be represented. The World Power Conference will hold a special meeting during the course of the exhibition. International discussions will be arranged on such subjects as the use of

electricity in agriculture, railway electrification, inland navigation and the utilization of water power, and international exchange of power.

The Swiss Comptoir held annually at Lausanne will take place in September next.

WRITING DOWN MACHINERY.

An interesting point was made by Mr. Pollit at the annual meeting of the Bradford Chamber of Commerce on February 9, when he suggested that the Chamber should take up the question of the depreciation of machinery. Everyone knows how important it is that firms should make ample provision for installing new machinery by writing down their plant if they are to keep down the cost of production. Mr. Pollit suggests that it would act as a great incentive to the introduction of modern equipment if the Government would incorporate a clause in the Finance Bill, permitting factory owners to write down new machinery to a reasonable level in a short number of years. The matter is certainly worth very careful consideration. We shall be interested to see what other business organizations think of the suggestion.

Indian Economic Notes.

Rubber in India.

Some interesting statistics regarding rubber have now been made available by the Department of Commercial Intelligence at Calcutta. The number of rubber plantations in 1924 was 998, covering an area of 193,911 acres, as against 972 with an area of 198,018 acres in the preceding year. New land planted with rubber in the estates during the year 1924, so far reported, amounted to 3,254 acres, and the area of old cultivation abandoned to 1,798 acres showing a net increase of 1,456 acres over the total area of 128,002 acres in 1923. The total area under rubber was thus 129,458 acres, which is 1 per cent above the area of the previous year, and of this area only 81,918 acres were tapped. Of the total area under cultivation, 50 per cent was in Burma, 32 per cent in Travancore, 8 per cent in Madras, 7 per cent in Cochin, 2 per cent in Coorg, and 1 per cent in Mysore. The total production of raw rubber during the year is reported to be 15,601,296 lbs. (Hevea 15,379,259 lbs., Ceara 60,591 lbs. and Ficus elastica 161,646 lbs.), as against 14,462,504 lbs. (Hevea 14,403,566 lbs., Ceara 39,938 lbs. and Ficus elastica 19,000 lbs.) a year ago. The yield per acre of tapped area was 208 (169) lbs. in Madras, 202 (193) lbs. in Burma, 193 (222) lbs. in Cochin, 178 (202) lbs. in Travancore, 140 (156) lbs. in Coorg, and 101 (100) lbs. in Mysore, the figures for 1923 being shown in brackets. There was an increase in the total production in the year under review especially in Madras and Burma. The daily average number of persons employed in the plantations during 1923 was returned at 36,800, of which 31,576 were permanently employed and 5,224 temporarily employed, as compared with 36,528 (31,883 permanent and 4,695 temporary) in the preceding year. The total stock of dry rubber held on December 31, 1924, was estimated at 5,007,798 lbs. (Hevea 4,882 873 lbs., Ceara 24,665 lbs. and Ficus elastica 100 260 lbs.) as against 4,670,794 lbs. (Hevea 4,614,091 lbs., Ceara 37,703 lbs. and Ficus elastica 19,000 lbs.) reported on the corresponding date of 1923. The exports of rubber by sea from British India to foreign countries during 1924-25 amounted to 18 million lbs., showing an increase of 17 per cent as compared with the preceding year. The United Kingdom absorbed 48 per cent, Ceylon 22 per cent, the Straits Settlements 19 per cent and the United States of America about 10 per cent of the total exports. Madras accounted for nearly 52 per cent and Burma 48 per cent of the total trade.

EXPERIMENTS ON JUTE FIBRES IN BENGAL.

The Annual Report of the Department of Agriculture, Bengal, for the year 1923-24 publishes the following account of experiments carried out on Jute (*Corchorus capsularis*) fibres during the year under review :—The usual work of the Fibre section, *viz.*, the evolution of improved races, and the distribution of these to the cultivator has occupied the main proportion of the time of Mr. McLean (Fibre Expert) and his staff. D. 154 now seems to be more or less definitely established as the highest yielder among departmental races, though R. 85 runs it close. Some hybrids were tested in the year under report ; but, owing to unsuitable weather, the results obtained were not reliable. The experiments are being repeated in the present season. In collaboration with the Indian Jute Mills Association and the Dundee Chamber of Commerce, an investigation into

the quality of the fibre produced by departmental and other races of jute under different conditions, *i.e.*, at different centres in the jute-growing tracts, was commenced, and interesting results have accrued. Incidentally the reputation of the departmental races as producers of good quality fibre has been confirmed ; but the most important points, which have so far emerged, are concerned with the correctness or otherwise of the old standing conviction in the jute trade that the environment is all powerful in determining the quality of the fibre and that the seed has little influence in this direction. For instances, there are *jat* districts, Northern districts, etc., and experienced men can usually, by inspection, point infallibly to the tract where a sample of jute was raised. The samples of fibre produced in the investigation under discussion tend, in some cases, to challenge the above belief by indicating that the seed as well as the environment is a definite factor in determining the quality of fibre. It is obviously impossible to decide a matter of this kind in a single year, and the decision to continue the experiments was unanimous, a number of important firms offering land at their mofussil agencies for the purpose of further trials. Last year's varietal tests were carried out under unfavourable conditions and, being inconclusive, are being repeated in the present year. One hybrid, D. 39, promises well as regards yield ; but its stem is unfortunately red in colour.

Improving Indian Cotton.

In the course of his speech at the 12th meeting of the Indian Central Cotton Committee, the President, Dr. D. Clouston, said :—"Since we last met there is a good deal of steady progress to record in the Committee's work. The Cotton Ginning and Pressing Factories Act has come into operation, the Government of India having accepted our recommendations in regard to the rules to be made under the Act. The marking of bales and weekly statistical returns are now in force throughout British India with the exception of Burma, and in Burma voluntary statistical returns have been organized, Provincial Governments have issued the necessary rules under the Act, and here again our recommendations in the main have been adopted. I should like to acknowledge on your behalf the extremely valuable work done by our Local Sub-Committee in connection with this Act. Everything possible has been done to give the trade early information regarding the press marks allotted, the rules in force in different provinces, and the manner in which bales should be marked.

The passing of this Act heralds the dawn of a new era in the marketing of Indian cottons and the disappearance of many abuses which have long caused great loss to the country and to the cotton-grower. To ensure that the Act will be worked successfully, and that it is utilized to the fullest possible extent, the sustained interest of Provincial Cotton Committees in the subject of cotton marketing is essential, and I would ask all provincial representatives to do all that lies in their power in this direction. The Act provides for the control of the cotton trade by the trade itself and, although it includes certain penal provisions, it depends on trade action and not on official control for its successful working.

You will be also glad to know that the Madras Government have put the Cotton Transport Act into force in three large zones in that Presidency. Hence the protection afforded by the Act and advantages accruing therefrom have been secured for another large area producing long staple cotton in this country. At previous meetings we have discussed the details of the working of the Act in the Bombay Presidency, and have had before us definite statements from the Mill-owners' Association, from various members of the trade and from agricultural officers, as to the improvement in the quality of the cottons of protected tracts due to the application of the Act. The working of the Act during the past year thus fully justifies our previous conclusions as to its value."

Factories in Bombay.

According to the report on the working of the Factories Act in the Bombay Presidency during the year 1924, there were 1,211 factories in operation during the year with 355,000 persons employed. Owing to greater care being exercised in accordance to the amended Act, the number of children employed showed a considerable reduction. The number of accidents showed some increase in spite of more efficient and better safeguards being employed and therefore the increase is attributed to better reporting.

Special attention is being given in recent years, to the introduction, in certain cases by compulsion, of protective devices. All power presses have now automatic guards equipped to them which prevent serious accidents. Similarly most of the mills in Ahmedabad have now automatically locking hoist doors. The safeguarding of auxiliary plants in mills also received greater attention during the year. In the matter of ventilation also, considerable

progress has been made. The extension in the use of the Kata thermometer during the year is a very encouraging advance and it is satisfactory that mill managers are taking greater interest in this as also in the general improvement of the ventilation. The Sholapur Mills of which Messrs. Morarji Goculdas are the Agents, have had during the year a ventilating and humidifying plant equipped thereto, which is capable of dealing with 150,000 cubic feet of air per minute and powerful enough to effect an air change in the spinning room every 2½ minutes. Greater attention was also paid in educating the mill worker in regard to machinery, and it is reported that more than 750 "Safety Pamphlets" were sold.

NEW CINCHONA PLANTATION.

A new cinchona plantation is to be opened at Anamalai Hills by the Government of Madras, comprising 20,000 acres. In view of the diminution of supply of bark from private plantations in the section, the present proposal is to bring under cultivation 2,550 acres within the next decade. The Government is of the opinion that the plantation of cinchona should be on a regular programme by the local government, and the capacity of the factories should be gradually developed. It is estimated that the scheme will involve a non-recurring expenditure of 446 000 rupees, and a recurring expenditure of 1,012 000 rupees.

TATA HYDRO-ELECTRIC POWER COMPANIES.

For the six months ending the 31st of December 1925, the revenues of the Tata Hydro-Electric Power Supply Company and the Andhra Valley Power Supply Co. were Rs. 20,25,612 and Rs. 25,83,849 respectively. Expenditure including interest, depreciation, and income-tax was Rs. 11,79,039 and Rs. 22,06,225, net profits Rs. 8,46,573 and Rs. 3,77,624. The loss of profit due to the mill strike was Rs. 4,85,578, and Rs. 5,13,421, respectively.

Canadian Trade and Finance.

Montreal, February 4, 1926.—The conclusion that the year 1925 marked a decided improvement in the economic condition of Canada can now be supported by a variety of statistical evidence, the figures of foreign trade, bank debits, railway loadings and earnings all show an increase over those of the previous year.

The chief source of improvement is to be found in the increased productivity in the primary industries of agriculture, mining and fishing. The total yield of wheat, provisionally estimated at 422 327.000 bushels, is the second largest crop in our history and compares with 262,000,000 bushels last year. There were substantial increases also in the coarser grains. The preliminary official estimate places the total value of the field crops of 1925 at $1,112 691,000 as compared with the final estimates for 1924 and 1923 of $995,235,900 and $899 226 200 respectively. The increase is largely accounted for by the value of the wheat crop $466.755,000 which is the largest on record. The crop was exceptionally well distributed and with more balanced relations between agriculture and the other industries, the farming community is in a better position to support general trade activity than it has been in several years.

A change for the better has come over the live-stock industry. Cattle receipts at the leading markets were heavier and stockyard returns show a substantial increase. There was a keener foreign demand for Canadian cattle and the export of animals and animal products both in volume and value exceeded those of the previous year.

Dairying continues to make gratifying progress, especially in the middle west. The production of creamery butter and cheese was larger and is estimated in the aggregate to have returned the largest revenue in the history of the industry. Exports of butter from Canada for the twelve months ended 31st October 1925 were 30,843,735 lbs. against 21,315,324 lbs. in 1924 and 12 214,084 in 1923. The fishing industry in the Maritimes had an exceptionally good season. A larger number of vessels were engaged and the total landed value of the catch was substantially in excess of the previous year. The total salmon pack of British Columbia was approximately 1,625,000 cases of all grades, a little less than in 1924 when a record was established. The sockeye pack was slightly larger than last year and export demand was stronger.

A great advantage has been made in the mining industry both in the development of established fields and the discovery of new mineral areas. Gold production for 1925 reached a record value of $35,768,000. Lead and zinc show large increases and the market for these two metals has been strong. A marked improvement is also noted in the

production totals of nickel, copper and cobalt. Asbestos production increased but coal, owing to protracted labour troubles, showed a loss in tonnage from the previous year. The total value of Canada's mineral output in 1925 has been officially estimated at $228,440,000, an increase of $18,857,000 over the figures of 1924.

The lumber industry experienced a rather difficult year owing to overproduction and keen competition which resulted in price concessions. Shipments from Eastern Canada to Europe fell off but British Columbia exports were larger and the domestic demand is reported to be well above that of last year.

The pulp and paper industry had a fairly satisfactory year despite a tendency to lower prices. Newsprint production was well maintained, and for the first time on record the output of Canadian mills exceeded that of the United States. The total output for the first eleven months was 1,313,121 tons, an increase of 142 469 tons over the corresponding months of last year. The expansion of the pulp and paper industry in Canada has been remarkably rapid. From 1919 to 1924 the capital investment increased from $275,767,000 to $459,457,000, while in the same period the total value of the output advanced from $140,186,457 to $223,719,645.

The improvement in the business and industrial situation became more pronounced in the fall and was fortified by the general increase in agricultural purchasing power which gave a stimulus to all activity. The number of freight cars loaded, which is the best general index to the volume of commodities moving in trade, began to improve in the second half of the year and the loading for 1925 exceeded those of the previous year both for merchandise and in the aggregate.

The farm machinery industry has emerged from the depression of recent years and both domestic sales and exports have been in substantially larger volume. The cotton mills have been operating at a higher rate in recent months and the industry is in a much more favourable position with cheaper raw material. The situation in the woollen goods industry, however, continues unsatisfactory owing to foreign competition aggravated by depreciated exchanges. Other lines of textiles, including knitted goods and clothing have experienced a revival and reports as to the prospects for trade are almost everywhere better.

Buying generally, however, continues on a conservative basis, although here and there are indications of future commitments being made on a more extensive scale. Commercial failures for the year both in number and extent of liabilities, show a considerable falling off. There has been a movement toward consolidation in the wholesale trade and generally speaking the business of the country is in stronger hands; inventories are low and merchants are depending less than formerly upon borrowed capital.

Construction work has played an important part in the increased business activity. Building operations have been going forward on an enlarged scale and the total value of contracts awarded for the year is estimated as $297,973,000, an increase of 7.8% over the final figures of 1924.

The automobile industry continues to expand. The production figures of cars and trucks in Canada for the ten months ended October 1925 exceeded by 8.357, the total production of 132 580 for the entire year of 1924. The industry has been benefitted by the restoration of the McKenna duties in Great Britain and export business has increased over the previous year, as well as domestic sales.

During the year considerable progress has been made in the removal of obstacles which since the war have blocked the way to the development of international commerce and the general trend of world trade has been towards recovery.

For the twelve months ended 31st October 1925, exports from Canada had a total value of $1,190,546,000 against $1,076,000,000 in 1924. Imports showed a gain of $47,000,000 and the favourable trade balance for the period had risen from $268,000,000 to $315,000,000. Next to the United States, Great Britain is our best customer and total trade between Canada and the Mother country in the twelve months under review has grown from $535,959,000 in 1924 to $618,706,000 in 1925. It is noteworthy that our exports to Germany, France and Belgium show substantial gains while the visible debit balance of our trade with the United States has been reduced. Tourist expenditure are an increassing item of national income which are not reflected in the custom house figures.

The total assets of the Chartered Banks on the 31st October were $2 882,720 000, as compared with $2 608,850,000 a year ago. During the year savings deposits have increased $88,000,000 or about 7% and commercial loans have continued to decline. The credit situation remains easy and favourable

to business expansion and the stock market has had a pronounced rise on the strength of the improved outlook.

CANADIAN POWER PRODUCTION.

In November, Canadian Electric Power Production amounted to 25,525,781 K.W. Hr., on the basis of figures representing 92% of the industry. The striking fact about those figures is the rapid increase in output which has characterized both October and November. The second table gives the same figures for Ontario and Quebec. December figures will be given next month. After next month the figures will be quoted quarterly. We would prefer to give the number monthly but some of the largest producers report quarterly so that we are unable to publish more frequently.

Canadian Power Production.

1924.	Daily K.W.H.	1925.	Daily K.W.H.
September	20,958,142	September	23,992,587
October	21,209,545	October	23,957,359
November	22,605,957	November	25,525,781

Ontario and Quebec Power Production.

September	17,349,728	September	18,469,670
October	17,934,178	October	18,933,750
November	18,599,701	November	20,283,462

UNITED STATES' INVESTMENTS IN CANADA.

In an article published in the January number of the *Spur*, Mr. C. E. Neill, the General Manager of the Royal Bank of Canada, wrote :—

"In the ten years since the beginning of the world war a remarkable change has taken place in international and financial relationships. The United States is now a great creditor nation and New York as its financial centre has become the chief market for investment capital, although probably London, as a result of her longer experience and foreign banking machinery, still retains a commanding position in financing international trade. In 1924 foreign flotations in New York market, including Canadian issues, aggregated $1,000,000,000 while the flotations of foreign securities in London including British Colonial issues were only $550,000,000 or about one-half of those of the United States.

Notwithstanding the dominating position she now occupies as the world's capital market, it should not be forgotten that the United States has been the greatest external borrower in history. The most rapid economic development that the world has ever seen was made possible only by the investment of foreign capital and it has been estimated that England alone advanced the United States in the aggregate, no less than three billion of dollars. At the outbreak of the war the exportable surplus of commodities sufficed to pay interest charges on the external debt of the country, but left the repayment of capital under normal conditions of peace a problem of the longer economic feature. The opportunities created by the war, however, gave rise to an immense increase in exports to Europe payment of which was largely made from the proceeds of the sale by England of her dollar securities and that a capital liability which has been growing for over two hundred years was within a comparatively short period of time almost completely discharged.

I have simply drawn attention to these historical facts in order to emphasize by comparison the position of Canada. In the matter of development Canada is passing through the same progressive stages which marked the early history of the United States. Canada is a young country, rich in promise, requiring population and the investment of capital to develop her arable lands, mines, forest resources, water power and other natural wealth. Geography, racial kinship, identity of language have led to a very strong natural relationship between Canada and the United States. Canada was one of the first foreign countries to attract American capital and with resources even greater than those of her southern neighbours in proportion to population, she is still a most attractive field both to the conservative investor and the enterprising capitalist. According to an estimate based on the best information available, the foreign investments of the United States at the end of 1924 amounted to approximately $9,500,000,000 roughly distributed as follows :—

	(Millions of Dollars.)
Canada	2.545
Latin America	4.140
Europe	2.115
Asia and Oceania	122
	$9.522

Prior to the war there was a regular flow of capital from Great Britain to Canada and in 1913 it was estimated that Great Britain held 77% of the outside investments in Canada and the United States only 17%. With the outbreak of the war the supply of British capital ceased and since that time American capital has been gradually invested in Canada in increasing amounts until in 1923 it was calculated that the amount of American capital in Canada was in excess of 52% of the total external debt. A tentative compilation reveals that Dominion and Municipal

Government securities formed a large proportion of the total, amounting to $1,125,000,000 while industrial securities and direct investments in Canada through the establishment of branches by manufacturers, etc., is estimated at $1,420,000,000.

The investment of capital in any considerable amounts in a country for its development results in an inflow of goods and capital instruments. For the fiscal year ended 31st March 1925 Canada bought from the United States $510,003,256 of goods representing 64% of her total imports and sold to the United States $417,457,171. Each country is a leading consumer of the other's products. Next to Great Britain, Canada is the best customer of the United States, receiving from her manufactured goods for the most part, giving employment to American labour, and sending in exchange needed raw materials of forest and mine and agricultural products.

While I have nothing whatever to say upon the international trade policy of the United States or its adverse effect on our basic industries, I would merely state as an economic truth that between nations as between individuals, there is a mutuality of interest and that if one country increases its production and expands its market it also increases its buying power for the products of other countries. With an investment in Canada of approximately 2½ billion dollars and an annual trade in commodities of nearly a billion dollars, there exists a business relationship between the United States and this country calling for the most thoughtful consideration on both sides.

BUSINESS CONDITIONS IN THE UNITED STATES.

The outstanding event of the financial year was the steady rise of security prices in the United States. In last May's issue of the Monthly Letter we pointed out that since both agricultural and manufacturing prices were stabilizing at a level about 60% above that of 1913, a substantial rise in security prices would be required to discount the earning power of this new level together with the earnings which were ploughed in during the war. A corporation's fixed assets and productive equipment cannot now be replaced without an expenditure 60 to 75% greater than would have been required in 1913. While it may be true that optimism has carried speculation too far in the case of certain securities yet the upward movement seems in the main to have been fundamentally sound.

In the last year the value of agricultural production was about equivalent to that of 1924. While the indebtedness of the West and South remaining as an aftermath from agricultural deflation has not been entirely paid off, yet the readjustment of prices obtained for agricultural products together with the good crops of the last three years has largely restored the farmers' buying power, and of course agriculture represents the largest single consuming unit.

Manufacturing has done much to adjust its output to consumption and the expansion of 1925 has only resulted in a manufacturing output of 8% above the normal anticipated by the statisticians. This balanced relation of production to consumption is one of the most healthy factors in the general situation since so long as there is no sign of overproduction there is no accumulation of goods with its attendant dangers.

There have been many statistical analyses which have pointed out the probability that building needs have been largely satisfied and that the time was at hand for some recession in this activity. It is to be noted, however, that December building contracts were very large and give no immediate indication that the volume of construction is falling off.

Transportation has been making remarkable strides, all measures of operating efficiency such as overhead cost per ton mile, labour per ton mile, or coal per ton mile have been improved over all former records. The car loadings for the year surpassed all previous records. The increased efficiency on the part of the railroads in the direction of prompt delivery and the increased effectiveness of the motor trucks in short haul work has permitted surprising reductions in the stocks of the wholesale and retail dealers throughout the country. This is really a new factor in the general economic situation since it permits more rapid turnover. These changes will eventually produce results of some importance to the whole financial structure. It is already suggested that such underlying changes, at least for the moment, decrease the amount of money borrowed from the banks.

The more important financial reviews of 1925 and forecasts for 1926 suggest that the present position of business requires caution. Land speculation of the type that is going on in Florida and the piling up of large credit structures on the basis of partial payment plans

are pointed out as weak points in the financial structure. These general warnings are being so widely distributed that they may do much to prevent speculation being carried to a point where it will seriously weaken the financial structure.

Yet the population of the United States is so large, the general standard of living sufficiently high, and the resources are so varied that a high degree of prosperity could be achieved within the country as merely a self-supporting unit, over and above these factors the gradual increase in European buying power produces a constantly growing market which gives increasing strength to the general situation. The United States, with only 6% of the total population of the world, produces so large a volume of those necessary commodities which the world requires that so long as the more basic factors remain as favourable as they now are, there can be no prolonged business depression in the United States. In an attempt to measure the resources and productive capacity of the United States, Hon. F. Vernon Willey and Mr. Guy Locock of the Federation of British Industries, presented the following rather striking table :—

	American Percentage of Total World Production or Resources. Per cent.
Coal Production	43.5
Petroleum Production	71.9
Copper Production	52.7
Pig Iron Production	60.2
Steel Ingots and Castings Production ..	59.8
Wheat Production	21.3
Cotton Production	52.0
Lumber Production	52.6
Automobiles Registered	82.7
Telephones and Telegraphs	57.8
Railroads	33.9
Rubber Consumption	70.9

The Sesqui-Centennial Exposition.

Philadelphia, December 20, 1925.- On July 4, 1776, the Declaration of Independence was adopted and the United States of America asserted its right to be numbered among the sovereign nations of the world. When the one hundredth anniversary of that occasion was reached in 1876 the event was fittingly celebrated with the Centennial Exposition. The one hundred and fiftieth anniversary year arrives with the dawn of 1926. It is eminently appropriate that there be a memorable observance of the event. To this end the Sesqui-Centennial International Exposition has come into being. Philadelphia, assuming the task by right as the place where the stirring events of 1776 were centered, bids the people of the United States and the people of the world join her in solemn celebration of one hundred and fifty years of American independence.

Everything that has been planned is in keeping with the patriotic festival which is being observed. The Exposition should properly be, and will be, a visualization of the spiritual, scientific, economic, artistic and industrial progress that has been made in America and in the world during the fifty years that have elapsed since the time in 1876 when the nations of the world were summoned here to celebrate the centennial of our country's independence.

The visualization of a half century's progress can be made effective in some measure by buildings and the exhibits which they house. But mere steel and stucco will not tell the whole story. They may be made eloquent, but a deeper note must be added to their voice. On such an occasion as this material expression must be overlaid with spiritual expression. This fact has always been kept in mind in planning the Sesqui-Centennial Exposition.

The story of American freedom, both the opening chapters of struggle and the closing chapters of accomplishment, will be set forth in pageantry and parade as it has never been before. The great Stadium has been planned to provide the physical necessities for such a carnival of pageantry. Nor is the fact to be overlooked that Independence Hall and Carpenters' Hall and other settings of the memorable days of 1776 still stand in Philadelphia as they were then. These notable landmarks of American history will be brought into the scheme of the celebration with suitable exercises. The humblest visitor to the Exposition may tread the very ground on which Washington and Jefferson and Franklin walked.

The President of the United States has dignified the occasion by accepting an invitation to be present as the Sesqui-Centennial orator, and will be in Philadelphia to speak to the people of the nation on July 3 and 4, thus emphasizing the aspect of the Exposition as a great national patriotic celebration.

To be truly representative of the occasion, the Exposition should transcend purely national

boundaries. In securing her independence the United States not only worked out her own salvation, but gave to all the people of the earth a demonstration that a government could be established on the model of a republic and survive and prosper. Other nations have profited by the example. It was, therefore, fitting that the 150th anniversary of American independence should be shared by many outside our boundaries.

On March 19, 1925, President Coolidge in a proclamation invited the nations of the world to participate in the Sesqui-Centennial International Exposition "for the purpose of exhibiting the progress of the United States and other nations in art, science, and industry, in trade and commerce, and the developments of the products of the air, the soil, the mine, the forest, and the seas," and requested that they co-operate with the Exposition "by appointing representatives and sending thereto such exhibits as will most fitly and fully illustrate their resources, their industries and their progress in civilization."

Many nations have accepted that invitation and a truly representative international celebration is now assured. Some of the countries will place their exhibits in specially constructed national pavilions. Others will reproduce old and famous edifices or cross sections of the life in representative communities of their countries. Still others will send exhibits of manufactures or products for which they are famed.

Nations Who Participate.

Among those nations which, either officially through their governments or unofficially through industrial groups, have signified their intention of participating are the following:—

Great Britain.—More than 50,000 square feet in the Manufactures section will be devoted to representative displays of the products of Great Britain. The Royal Worcester, Dalton and other pottery and china works will be included in this section. Fine woollen goods, fine linens and decorative textiles will be represented, and in some cases the process of their manufacture will be demonstrated. Sports goods and cutlery will have a special section.

France.—The creations of the great millinery artists of Paris which are imported by America, and for which America pays millions of dollars annually, will find a place in the textile and industrial sections. Manufacturers of perfumes, soaps, silks, fine leather and lingerie will have representation. The French colonies, through the Minister of Colonies, expect to show products of wide and unique interest.

Belgium.—Lace and porcelain, two products for which Belgium is justly famous, will be fully represented in the Palace of Manufactures. These two ancient industries will display rare and beautiful examples of their products, artistic and commercial. Belgian banking interests are gathering an exhibit which will portray the potential wealth of the Belgian Congo. The arduous task involved in bringing crude rubber from the gloom of the jungle to the light of civilization, there to convert it to the uses of man, will be shown by exhibits.

Holland.—A small section in the Manufactures section will display certain industrial arts of Holland. Non-perishable foods may also be exhibited by this country. Final plans are yet to be made.

Denmark.—About 6,000 square feet of space will be occupied by the products of this country, mostly industrial. An exhibit of porcelain ware will be sent by a group of Danish manufacturers.

Sweden.—The exhibit of this country will be similar to that of Denmark. About the same amount of space will be taken. The Swedish ironmasters will exhibit in the Palace of Machinery, and a representative collection of contemporary paintings will be sent.

Norway.—When the Parliaments convene in January, it is expected that some action will be taken resulting in Norwegian representation. Industrialists and government alike have expressed definite interest in the project.

Austria.—Industries whose products are classed among the industrial arts will send exhibits. About 16,000 square feet of space has been reserved for these in the Manufactures section. Through what corresponds to our Board of Trade, the city of Vienna has made an appropriation to construct what is expected to be one of the most interesting features in the foreign section—a reproduction of a section of old Vienna.

Rumania.—Official acceptance is expected. Private interests will build a Rumanian Village in which the native dances, customs and daily life of the Rumanian people of the countryside, rarely revealed to travellers, will be portrayed. Here, also, will be on display various products of Rumanian industry and examples of the arts.

Switzerland.—The representative industries of Switzerland which have a world-wide reputation will find representation. Examples of the woodcarvers' art and the highly valued embroideries of the St. Galle looms will be arranged in attractive exhibits.

Italy.—The Italian Government has shown great interest in the Exposition, and the Minister of Foreign Affairs has indicated that the Government is very favourable. The great industries of the cities of northern Italy will participate, and it is expected that pottery, tapestry and textiles will be represented. Famous masterpieces of painting and sculpture in which Italy is so rich will probably be sent for exhibition among the Fine Arts.

Spain.—The Spanish Government has accepted officially. It will send many objects of universal interest. Among these will be the jewel casket of Queen Isabella, the repository for the famous jewels pledged to outfit Columbus' voyage of discovery. Historical tapestries depicting scenes and moments in Spanish history will be taken from the walls of ancient Spanish palaces to provide a background for the exhibits. The greatest collection of ancient armour in the world, the America Real, will be sent. This collection is so famous that no itinerary of a European tour forgets to provide a day for its inspection. The collection is so large that negotiations are under way to have it brought to the exhibit in a special government transport. A military band, the finest in Spain, and a troop of the King's guards will accompany the collection. They will be stationed here during the greater part of the Exposition. Another collection of documents relating to Spain and Spanish-American relations will be gathered from several ducal palaces where they are privately owned. They will be put on public view for the first time. Examples of Spanish industrial art will also find place in the Exposition.

Japan.—The Government has accepted officially and an appropriation of approximately $750,000 has been made. The Japanese exhibit is now being assembled. Included within its scope will be the finest products of its industries and crafts, many of which are unsurpassed anywhere in the world. Silks and ceramics, prints and paintings, armorial collections of feudal Japan and specimens of its export industries will all find representation. It is expected that reproductions of a temple and pagoda will be built. The exotic spirit of the Orient will be suggested by picturesque arched bridges spanning quiet pools dotted with giant water lilies. The Japanese trade guilds and chambers of commerce are planning to exhibit their wares not under one roof but in the various palaces along with products of the same kind exhibited by other countries. The Japanese exhibit as now contemplated will be larger than any ever before attempted by the Government.

Poland.—There will be official representation by Poland. A tentative site for a Polish pavilion has already been set aside following government instructions. The outstanding feature of the Polish contribution will be the reproduction of a Polish Village of the eighteenth century. Here, dressed in their native costumes, a group of country people will go about their tasks as the country people did two hundred years ago. Exhibits of peasant workmanship in the arts and crafts will be displayed, and Poland's export products will be adequately represented.

Czechoslovakia.—This country has officially accepted. The principal exhibit will be the reproduction of a Moravian farmhouse containing an elaborate and attractive display of the arts and crafts. The contemporary vogue for things of peasant craftsmanship, now being filled to so great an extent by Czechoslovakia, will undoubtedly result in a comprehensive display of these articles and the methods of making them The Government will also contribute an official exhibit.

Jugoslavia.—Official acceptance has just been made by Jugoslavia, and an official pavilion will be erected to hold the exhibit of the Serbs, Croats and Slovenes.

India.—The merchants of India under the official sanction of Lord Birkenhead, Secretary of State for India, will build an immense pavilion patterned after the Taj Mahal, universally acknowledged to be one of the world's most beautiful buildings. The plans have been received and the contract let. It will cost approximately $500,000. The merchants will display native fabrics, old pottery, rugs and carpets, and the rich and rare products which have made India known to the Occident. It is expected that a huge native bazaar will be opened at which visitors may satisfy their curiosity as to things of the East, and where native chiefs will offer India viands for the Western taste. The famous Burmese Theatre will give performances in the pavilion.

Germany.—Among the German exhibits will be the reproduction of the famous Nuremburg Marketplace. This, a famous and sentimental memory to thousands of people throughout the United States, will be reconstructed by the town of Nuremburg. Hundreds of years old, the Marketplace has enshrined itself within the memory of many generations. It is an object of delight to tourists. Several large groups of

German industrialists are also contemplating exhibits of such products as toys, textiles, machinery and the arts and crafts.

In addition to the above-mentioned countries from which definite exhibits are certain of representation, there are a number of other countries that have accepted but have not yet decided upon the nature of their exhibits. These include Nicaragua, Panama, Haiti, Hungary, Liberia, Persia, Egypt and Cuba. Countries with whom the Sesqui-Centennial officials are now in correspondence relative to participation and of whom it may be said because of their favourable attitude acceptance is almost certain, are as follows: Mexico, Abyssinia, China, Turkey, Lithuania, Ecuador, Argentine, Chile, Peru and Columbia. There are still other nations which have raised the question of participation, though nothing is yet definitely decided in their cases.

Agricultural Credit in China.

By Christopher Hay, M.A.

We hear so much of China and its wars now-a-days that it is a pleasure to turn to what she is doing for her farmers. For the convenience of the farmers and labourers the Shanshi Provincial Assembly in 1920 passed, we note, a Bill authorizing the organization of a Farmers' and Labourers' Bank in every *Hsien* district of the Province.

The regulations governing such Banks provide for varying amounts of capital for each district, proportionate to population and natural resources.

The capital of a Farmers' and Labourers' Bank for a 1st grade *Hsien* district is fixed at $30,000; for a 2nd grade district, $20,000; and for a 3rd grade district, $10,000.

Two-thirds of the capital is to be raised locally, while the balance is to be made up by appropriations from the provincial treasury. The capital stock is to be divided into integral shares of $500, which are sub-divided into small denominations of $50.

The bank is to grant loans to farmers and labourers, to receive fixed deposits, to accept gold and silver ingots and negotiable instruments from the public for safe keeping, and to act as fiscal agent for the local officials and banks and companies of good standing.

The loan to each private person is limited to $500, to each corporate body, $1,000.

Interest on loans is not to exceed 1 per cent per month or 12 per cent per year.

The banks, should their business prospects warrant, may, with the permission of the Ministry of Finance and the provincial officials, issue bonds, which shall not, however, exceed the total amount of outstanding loans granted to the public or twice the amount of their paid-up capital.

In pursuance of the foregoing enactment, several such banks have been opened in a number of districts, including Taiku, Kihsien, Wenshui, Fengyang and Yungning.

These banks are doing well at present, although there has been an occasional run on some of them, caused mainly by an over-issue of notes. Steps have been taken to check this over-issue, which is as it should be.

Shanshi provincial officials have recently been petitioned by merchants and members of the local gentry to forbid the indiscriminate issue of notes by these banks.

Here is something to ponder for those who want a new agricultural policy for India.

Sandow.

A London correspondent writes:—The recent death of Eugene Sandow had a curious effect. One thought with a certain guilt of the rust that had been allowed to corrode the dumb-bells, the chest expanders, and the rest of the apparatus by which we once were moved to emulate the strong man. To the post-War generation he was but a name, if that; but there is hardly a pre-War athlete who will not at some time or other have dabbled in Sandow's theories. His passion for muscular development was, of course, a passing craze, just as were those numerous "systems," all, curiously enough, (deriving from foreigners) which before the War imposed themselves upon us all. Now-a-days Swedish Drill has supplemented these developing systems, and our athletes' development is wider but less intense. Yet it should not be supposed that the Sandow cult was a worthless one; it was not. Anyone who can show the visible results of his system is bound in normal times, to make an appeal, and I, at any rate, have little doubt, that when the present effeminate phase of early manhood has passed, some use for the dumb-bell and the Indian club will again be found.

About three-quarters of London ought to have been pulled down fifty years ago.—*Mr. Gordon Selfridge.*

Topics from the Journals.

Forest Fire Insurance Abroad.

Under the above caption, the *Forest and Outdoors* has an interesting article. We read :—

Some time ago, one of Sweden's strong insurance companies added forest fire protection to its line of risks. The forests are divided into different risk classes, according to size and hazards, and the yearly premiums range from 3 kroner for forests less than fifteen years old and down to 50 ore per 1,000 kroner of insurance value. If a railroad runs through a forest property or in its vicinity, or if there are factories near by both recognized as constituting an unavoidable danger the premium is increased by 2 kroner per 1,000 kroner of insurance value on all property within 100 meters from such potential fire sources. Similarly, reduction of as much as 20 per cent in rates is offered where there are watch towers with guards and other safeguarding measures. Compensation is granted only up to three fourths of the actual loss sustained by fire in order to protect the risk company against arson or neglect in extinguishing fires. Of late years, all the leading timber and timber product industries have joined the Government in this campaign, having learned that it was to their common interest to perpetuate the forests. Thus the lumber interests, the match companies, the woodpulp and newsprint mills, the furniture corporations and all other allied interests have championed the cause of protecting Sweden's forest wealth against exhaustion and destruction. Nor is it an unpopular fight that these vested interests are waging with the aid of the Government, for there are hundreds of thousands of Swedish workmen and working women who are dependent for their daily bread on the industries that receive their basic products from the forests.

Cutting Regulations Enforced.

For years past, the annual cutting in Sweden has been limited by law to the extent that the owner of a timber tract is not permitted to saw down his own trees before they attain a certain growth. Another law that has been on the Swedish statute books for years stipulates that the area of yearly replantations must at least equal the area cut down. The replanting is carried out on a systematic basis, and the interest of school children in forestry is cultivated by giving them an occasional holiday to plant trees, while whole contingents of soldiers are called from their barracks and daily military drill and detailed to replanting work in remote sections. Young timber lands are really cultivated inasmuch as trained foresters inspect the plantations at regular intervals, and replant and cut down offending saplings which stand in the way of full development of larger and healthier trees. The State maintains one of the best forestry schools in the world, whose graduates are spread throughout the timber region engaged in the work of building up the natural wealth of the country which may be converted into kroner or ore for four or five decades. The crops which Sweden's foresters are to-day cultivating may not be reaped until the foresters are dead and buried, but the crops are reasonably certain. And each year's timber crop is worth hundreds of millions of kroner to Sweden, keeps scores of corporations busy and affords employment to scores of thousands of workmen.

Insurance in Finland.

In Finland, the forest is not insured for its full value, but only up to 75 per cent thereof. The party taking out insurance must stand the risk himself for at least one-fourth the value of the forest. One exception to this rule is in the cost of planting, regarding which the assuming of any personal risk is out of the question. If, for example, the value of a forest is $10,000, the owner can insure it for $7,500 at the most. For the remaining $2,500 the owner is his own insurer. Should the entire forest be totally destroyed by fire, the indemnity would be $7,500, while the loss to the owner would be $2,500. If the damage amounted to 50 per cent, the indemnity would be the same as half of the amount of insurance, or $3,750.

The yearly premium for an insurance of the entire forest for an amount of 30,000 marks would consequently amount to very little, in this case, which, however, is one of the most costly, an average of only 1 mark 34 penni per 1,000 mark ($1.34 per $1,000) of insurance. The membership fee also is insignificant, except in the first year's insurance subscription.

Co-operation Reduces Rates.

The question now comes: How is it possible such small premiums are sufficient to cover both damages and administration for forest fire insurance? In answering this question, it should be stated first that forest fire insurance, as well as other functions of the establishment, rests on the basis of mutual co-operation. Each policyholder in the forest fire insurance department is also a partner in it. But his responsibility for the obligations of his department is limited, in that his subsequent contributions do not exceed, during a year, the trebled amount of his yearly premium.

If, therefore, during a certain year the administration and damages exceed the yearly premiums and the possibly existing reserve fund is not sufficient to cover the deficit, a contribution premium must be levied. If the loss is so large that not even the highest allowed contribution premium is sufficient to pay for damages, those policyholders entitled to indemnity must bear the deficit, each one in proportion to the amount of damages, which have been credited to him. However, one can for good reasons assume that the ordinary yearly premiums, as small as they themselves are, shall be wholly sufficient.

What is Wrong with the Cotton Trade.

Cotton and Finance for March has a spirited article on the cotton trade. It says :—

Everywhere throughout the world there is a cry that cotton trade is exactly what it ought not to be. Cotton-growers are complaining that their remunerations for their investment and labour are not adequate because their margin of savings after meeting the increased cost of living is not much; spot houses are finding fault with spinners who are reluctant to buy large quantities; spinners on their part throw the burden on the poor consuming capacity of the public; broker's income is reduced because most of the goods are not even hedged and in short every section of business activity, connected either directly or indirectly with the cotton trade, is feeling a strain unknown in

recent years. It is immensely so in Bombay which is essentially a cotton city. Almost every kind of business in Bombay is directly or indirectly linked with cotton and its fortunes depend on the prosperity or otherwise of the cotton trade. Both the capitalists as well as the labourers are affected by the cloud which is passing over our city, as in the other cities of the world. There is, then, no question of the fact that an unsatisfactory state of affairs exists in the premier trade and industry of India and it is proper that a scientific diagnosis should be made and the prescription given.

The first and foremost wrong is that those statesmen and economists who are charged with the responsibility of guiding the economic destinies of their respective countries are giving a wrong lead to the cotton-growers. There is not the least insincerity in their actions and they are actuated by the best of motives. In the United States of America and Egypt which are two of the chief cotton-producing countries of the world, vigorous propaganda is being carried on to induce the farmers to reduce the acreage under cotton cultivation. The object of the propaganda is to enable the farmers to get better prices for their product. This sort of propaganda is based on a wrong economic conception. In recent years the tendency in the cotton-growing countries is that the yield per acre is gradually diminishing in spite of the advance in the knowledge of scientific agriculture. This might be due to natural causes, on account of the deterioration in the fertility of the soil. The wealth of the country as a whole improves with the increased production of goods, and the increased production of cotton means increasing purchasing power of the masses, it means greater clothings for the public at cheaper prices and in fact, the whole economic life of the country is given a new tone. At the same time the farmer does not lose anything by the lower values caused by a larger crop since he is compensated by the increased total yield per head. *The Dallas Morning News* deserves all praise from every well-wisher of cotton trade and industry for they have been incessantly urging the American farmers to increase the output in their acres.

There is not of much propaganda business in India and the annual crop largely depends on the monsoon and market prices. The Indian farmer often undertakes risks with extraordinary patience unheard of in the other countries of the world, for agriculture in most parts of India is after all a gamble on monsoon. What is wanted in India is that the farmers should be assured of reasonable prices for their products. In the United States of America and quite recently in Egypt it is the policy of these Governments to artificially encourage high prices as far as possible. Our country produces half the annual production of cotton in the United States of America and a quarter of the world's production and within India itself cotton exports head the list in the foreign trade of India. Of late the Indian Central Cotton Committee is doing something in the direction of what is being done by other associations in other parts of the world. But that is only a beginning. What is wanted in India is greater irrigational and transport facilities and in short, greater fostering by the Government. The great sustaining power in America to maintain the prices is largely due to the growth of co-operative societies and the credit extended by them to their members. Co-operative marketing in India is still in its infancy. Majority of the Indian staples are short ones unfit for spinning superior yarns and the farmers must be gradually induced to take more and more to long staple varieties in preference to shorter ones. Undoubtedly longer staples will fetch better prices for the farmers and if ginning and baling are done with greater care there is no doubt that the exports from this country will considerably increase, adding much to the wealth of India.

If what we have said above is feasible it means a steady supply of cotton for mills at reasonable prices. The mills will be working with greater confidence in the consuming public. There is no doubt of the fact that with the progress of civilization there is greater demand for cotton goods. The advance of science and the application of new methods of production and distribution have contributed not a little to the progress of the industry in other countries and our industrialists should adopt to them to stand firm in this competitive world.

Bombay has to learn a lesson from Japan. If at all there is anything in Japan which has enabled her to compete successfully with the other countries of the world in the textile trade, it is the existence and the use made of the Yarn Exchange at Osaka. The importance of a yarn exchange is not fully recognized in Bombay, nor in Manchester. A yarn exchange assures a steady market for the yarns produced and the spinner has only to look to his margin of profits and he need not have any anxiety about marketing. Automatically a reasonable difference between the price of raw cotton and that of cotton yarn is always maintained and the spinner is assured of a reasonable profit with no chances of risks. The existing stock of yarn in Bombay is carried by the mill-owners themselves but when the yarn exchange is created the entire stock will be taken up by the operators of the yarn exchange and thus every stage in the production and distribution of goods will be specialized. We feel sure that the creation of a yarn exchange in Bombay will considerably improve the depressed situation.

The World's Food Supply.

The following extract from a special Article by the Editor of the *Edinburgh Review* Mr. Harold Cox, in the current *Daily Mail Year-Book*, is of special interest to India.

The question of how far it is possible to increase the food production of the world has attracted a great deal of attention in the United States in the last few years, largely, no doubt, as the result of the very marked decline in America's export of wheat and other foodstuffs. So rapid, indeed, is this decline that, if present tendencies are continued, the United States will shortly become an importer instead of an exporter of food. The explanation of the present tendency is very simple: the American population is growing more rapidly than the area of cultivation is extending. Between 1900 and 1920 the population of the United States increased by 30,000,000, and is still increasing on spite of the restrictions on immigration, at the rate of about 1,600,000 a year.

An American Report.

A careful study of the "Potential Supply of Wheat" was recently prepared by Mr. O. E. Baker, of the United States Department of Agriculture. Although this study deals primarily with the problem of wheat, it provides very useful material for examining the whole problem of man's food. Mr. Baker gives many tables of figures showing the amount of land under cultivation in different parts of the world and the yield

per acre. But these figures must, for the most part, be regarded as illustrative rather than as positive. Of necessity, it is impossible to obtain absolutely precise returns. A similar consideration applies to figures of population in China and Russia ; at best we can only hope for approximate accuracy.

BETTER STANDARDS : MORE PEOPLE.

An important point on which Mr. Baker lays stress is that the call upon the resources of the earth is increased not only by the growth of population, but also by the raising of the standard of living. Even to-day many millions of people living in Europe are so poor that they cannot afford to use wheaten flour : their staple food is rye bread. As their position improves by industrial or social changes, their demand for wheat increases. Thus the Russian peasants, who, as the result of the revolution, were able to divide among themselves the estates of the great landowners, are now, to a considerable extent, themselves consuming the wheat which in former years they grew for export. If the under-fed inhabitants of India and China, together numbering not less than seven hundred millions, should also be able by any means to develop a higher standard of living, the additional pressure on the world's resources would be very serious.

INCREASING DEMANDS ON THE EARTH.

Those resources are limited not merely by the superficial area of the globe, but by the adaptability of the land to food production. A very large part of the earth's surface is too cold to grow wheat : in other parts the climate is too humid ; and even where the climate is suitable the land may be too hilly, or the soil too hopelessly barren. It has, moreover, to be constantly borne in mind that the human race is not content to ask the earth for food alone. Even if we gave up eating meat, we should still want sheep and cattle to supply us with wool and leather. We want timber and cotton and silk, tea and sugar and coffee and all these requirements involve a diminution of the land which can be applied to the direct purpose of food production. In addition, there is the ever-growing demand of civilized man for playgrounds and parks and flower gardens ; while the mere growth of houses, as can be seen in the neighbourhood of London, itself steadily encroaches on our food-producing land.

FOOD LIMITS GROWTH OF POPULATION.

The general conclusion is irresistible. Undoubtedly there are still many millions of acres of land in different parts of the world available for producing land and at present untilled. The continent of huge Africa is still to a large extent an unknown land, and may possibly prove to be of very great value to future generations. To a certain extent, also, by improvements in methods of cultivation, we can increase the output of land already under crops, though it is important to realize that increased output generally involves increased cost, and the point is soon reached at which it is not worth while to cultivate more intensively. But we have to face the fact that there is an ultimate limit both to the cultivable area of the earth and to the productivity of each acre. On the other hand there is no limit to the inherent capacity of the human race—or, indeed, of any other animal race—to go on multiplying its numbers until it is brought face to face with the impossibility of finding food. Mr. Baker's careful estimates end with the conclusion that we cannot count on a respite of much more than a hundred years. To be on the safe side, we may say that if the world's population continues to expand at the present rate for another two centuries it will become impossible to find enough food to go round, unless the white races are willing to content themselves with the low standard of living now endured by the Indians and Chinese.

Japan and the Indian Cotton Market.

The *Times Trade Supplement* in a recent issue states :

Last autumn the conductors of the Indian cotton mill industry protested against the proposal of the Government of India that the Tariff Board should investigate the causes of depressed markets and the general condition of the industry. The ground they took was that the Excise duty should be suspended with a view to repeal before any investigation was made.

On the morrow of the suspension of the Excise duties Mr. N. N. Wadia, Chairman of the Bombay Millowners' Association, who was then in this country, said that the relief, welcome as it was, must be followed by further steps, more particularly in respect to the menace of Japanese competition, if there was to be a return of prosperity to the Indian mill industry. Prosperity is not returning with any rapidity. Nine of the Bombay mills have not been able to reopen since the strike was settled at the end of November, and two of them are permanently closed. The nine mills employed some 50,000 of the quarter of a million operatives in and around Bombay.

It may be that certain features of mill management in India need reform, and that in some respects at least the millowners might emulate the efficiency of their Japanese competitors. But that is not a sufficient reason for opposing an inquiry. The contentions of the industry respecting the Far Eastern competition are controverted by apologists for labour and other conditions in Japan. Before promoting legislation on the lines suggested by the British Safeguarding of Industries Act, the Government of India need to be satisfied, by means of impartial and skilled investigation, that the relevant data justify, in greater or less degree, the views of the millowners.

THE YARN TRADE.

That the issue raised is of great importance to the Lancashire as well as to the Indian producer is shown by an examination of the figures in the yarn trade, of which until the last year of the war Japan had no more than an insignificant share. In the first year of that struggle Japan supplied India with only 921,000 lbs. of twist and yarn. In the last year of the war Japanese shipments reached some 27,250,000 lbs.

In the three following years there was a considerable falling off in imports, due in part to the high value of the yen, but the last 3½ years have seen a remarkable revival. The fall in exchange during 1924-25 helped the Japanese to supply the record total of 32,250,000 lbs., while the shipments from the United Kingdom dropped to 20,750,000 lbs. In the eight months of the current fiscal year to the end of November, Japan surpassed the figures of the corresponding period of 1924, while the United Kingdom supply fell from about 14,000,000 lbs. to little more than 9,500,000 lbs.

An examination of the counts of yarn sent from Japan to India since the war shows that there is little competition in the classes of yarn generally produced in India—*viz.*, up to 30's counts. As recently as 1922-23, however, a considerable quantity of short counts up to 20's was shipped. The small proportion of this trade since then, in conjunction with the rapid growth in the total shipments, makes it clear that

Japan has found it more profitable to attempt to capture the market which used to be practically monopolized by Lancashire.

A dissection of the figures for grey yarn and coloured yarn shows that the former Lancashire supply of grey yarn has largely passed into Japanese hands. In coloured yarns, the United Kingdom maintains its supremacy. But the market which Japan has captured is a much larger one than that in which Lancashire continues to take the lead. The total imports of grey yarns last year were 41,250,000 lbs., while those of coloured yarns were rather less than 8,500,000 lbs. In the eight months ended in November last the respective totals were nearly 25,500,000 lbs. and 4,500,000 lbs. In the highest counts—*i.e.*, those above 50's—both in greys and colours Lancashire retains the bulk of the trade; but it is not very large.

The Japanese shipments of piece-goods amounted to less than 6,000,000 yards in 1914-15, while ten years later they reached 155,250,000 yards. The rate of shipment has been well maintained in the current fiscal year; and there is a strong conviction in Bombay that the depreciated yen exchange has greatly assisted the Japanese shipper in the last two or three years. It is true that the importation from Japan is still less than 10 per cent of the total yardage of Indian goods available for consumption. But as pointed out in these columns on a previous occasion, the question of Japanese competition has to be judged, not alone by her present proportion of the trade, but by taking into account its insignificance in pre-war years.

EFFECT ON INDIAN PRODUCTION.

Further, the millowners argue that to gain a true idea of how the importation of Japanese goods affects the Indian market account has to be taken of the extent of the competition at the ports. In Bombay, for instance, the only Indian goods marketed to any but a negligible extent are those produced in the mills of Bombay City and Island. Careful calculations show that in the earlier stages of the war the proportion of Japanese piece-goods received in Bombay to the total amount of Indian piece goods on the market was only 1.9 per cent whereas in the last fiscal year it was 13.6 per cent.

Meanwhile there has been a rapid increase in the total production of the Bombay mills and in the Indian piece-goods on the market there: thus the percentage figures do not show such a wide divergence as might be expected seeing that the Japanese imports have risen in ten years from 7,000,000 to 115,000,000 yards. The Indian millowners argue that there is not room for the increased importations from Japan if the Bombay mills are to dispose of their production: and that the ordinary laws of supply and demand would check the Japanese shipments if they had not the adventitious aids of sweated labour conditions, of virtual subsidies from Government in support of the export trade, and of the depreciation of the value of the yen compared with the rupee.

Punjab Economic Inquiry Board.

The following is a summary of the Proceedings of a Meeting of the Board of Economic Inquiry, Punjab, Urban Section, held in the Financial Commissioner's (Development) Room, Lahore, at 11 A.M., on Tuesday, 8th December 1925, with M. C. A Barron, Esq., C.S.I., C.I.E., C.V.O., I.C.S., (Chairman), in the Chair.

1. The minutes of the Proceedings of the previous meeting held on the 28th April 1925 were taken as read and confirmed.

2. It was noted that a total sum of Rs. 66,000 had been budgeted for both sections of the Board for the next year, of which the share of the Urban Section was Rs. 15,000.

3. *Inquiries*:—(*a*) *Cost of Education in the Punjab*—Mr. Garbett reported that a questionnaire had been prepared for this Inquiry, and with the assistance of Inspectors of Schools he had secured returns relating to 3,000 out of 18,000 scholars in the Attock District. He intimated that he had now got to the stage of tabulation of these figures.

The Board desired to record its thanks to Mr. Garbett for the trouble he had taken, and was of opinion that an endeavour should be made to see what results can be obtained from the data collected before further investigation was made in other districts. It was felt that preliminary inquiries might be instituted in the meantime into Cost of Education in other countries.

(*b*) *The Decay of the Sugar Industry in the Jullundur Doaba*:—The note submitted to the Board by Lala Mulk Raj Bhalla was read. It was, however, generally felt by members that before any definite inquiry is undertaken in the Jullundur Doaba it should be ascertained whether there has been any decay in the Sugar Industry in the Province as a whole.

The Secretary was instructed to collect all the figures available as regards the production of Sugarcane and submit these before the next meeting.

(*c*) *An Inquiry into the Organization of the Railway Workers in the Punjab.*—This Inquiry was again discussed and it was decided that Mr. Abel should ascertain from the railway authorities whether they considered the present time suitable for an inquiry into the existing organization of the railway workers of the Province, and whether they are in a position to supply any data which would be useful to the investigator conducting the inquiry.

(*d*) *An Inquiry into the Earnings and Conditions of Unemployment of Artisans of the following trades.*—Blacksmith, Fitter, Carpenter and Bricklayer. The report prepared by Mr. Scott was considered by the Board. It was generally felt that the scheme outlined was much too wide to be undertaken by the Board, but the Director of Industries might be approached as to whether he could conduct an inquiry on similar lines in the special trades mentioned through the agency of his Industrial Surveyors.

(*e*) It was decided to undertake an *Inquiry into Earnings and Conditions of Labour in the Printing Trade in Lahore*, and this matter was referred to a Sub-Committee consisting of the Director of Industries, Lala Vishnu Dutta, Messrs. C. F. Strickland and W. H. Abel and the Honorary Secretary, who would draw out a questionnaire.

(*f*) *An Inquiry into Unemployment amongst the Graduates in the Province*—The preliminary note prepared by Lala Vishnu Dutta was considered by the Board, and it was decided that the note should be submitted to the Secretary who would have it circulated to members before the next meeting.

4. *Report on the Factory Conditions in the Punjab* :— Mr. Garbett stated that he had gone carefully through this report and did not consider it suitable for publication. The Board, therefore, decided that the report be not published ; but it should be considered whether the appendices are in a form suitable for publication.

5. *Tongawala Inquiry.*—As Lala Mulk Raj Bhalla was not present no report was forthcoming on this matter.

6. *Housing Conditions in Lahore City.*—It was noted that an examination of the Census Report had furnished information as to localities in Lahore in which an investigation of this nature might be suitably undertaken. The Sub-Committee in para 3 (*e*) above was asked to consider this inquiry and undertake the preparation of a questionnaire showing the lines on which such an investigation should be conducted. It was recognized that there might be difficulty in finding a suitable investigator for this work but the Honorary Secretary was asked to be on the look-out—it being understood that a lady-investigator would be the most suitable or possibly a man with an educated wife.

7. With regard to the request made by L. Gokal Chand Jaini to translate Mrs. Caleb's *Family Budgets* into Urdu, the Board decided that an Urdu edition of this work was not called for.

Mysore Economic Conference.

Board of Education.

At the Fifth Meeting of the Board of Education, held on Saturday, the 14th November 1925, at 8-30 A.M., in the Vice-Chancellor's Room, Central College, Bangalore, with Rajatantrapravina Dr. Brajendranath Seal. M.A., PH.D., D.SC., (Chairman), in the Chair, there were present 14 members, besides the Secretary.

The draft programme was approved and the various subjects were assigned to Sub-Committees, for investigation and report.

Propositions forwarded by the members of the Board for the Birthday Meeting of the Economic Conference, 1925, were next considered.

That relating to the pay of teachers was *resolved* to set down for consideration in connection with the question of Educational Finance.

Letter No. 6745—Edn. 189-24-2, dated 18th May 1925, from the Chief Secretary to Government, forwarding for the opinion of the Board an extract from the letter of the Inspector-General of Education *re.* Rules of admission to Adult Night Schools, holding of examinations, revision of curricula and preparation of suitable text-books, etc, was next taken up. *It was resolved* that the subject be referred to a Sub-Committee consisting of the following members :—

1. Mr. C. R. Narayana Rao (*Convener*).
2. Dr. S. Paul Chinnappa.
3. Mr. Gopalaswami Iyer.
4. Mr. D. Kongadiappa.
5. Mr. R. Ananthasubba Rao (*to be co-opted*).

Letter No. 2035, dated 20th October 1925, from the Secretary, Economic Development Board, forwarding a copy of the letter No. I. C. 2178–9—I.C. 122-25, dated the 28th September 1925, from the Secretary to Government, Revenue Department, calling for the opinion of the Board on the proposals of the Director of Industries and Commerce, in regard to the co-ordination of technical and general education in the State, was next discussed and it was *resolved* that the Board re-affirms the resolutions, passed at its Second Meeting, held on 6th December 1924, *re.* Vocational Training in High Schools, and is, further, of opinion that facilities should be given for opening new industrial schools and that more money should also be placed at the disposal of the Education Department for the better organization (including staff and equipment) of vocational instruction in general schools. But in view of the fundamental difference in aim and purpose between vocational instruction imparted in general schools and that in technical and trade schools, a joint board of control is not desirable.

Books in Brief.

Short Reviews of Recent Books.

Population

By Carr-Saunders Oxford University Press, London. *2sh 6d.*

This is a welcome addition to the *World's Manuals* Series issued by the Oxford University Press. Mr. Carr-Saunders' study of the Population problem is a suggestive one. He writes with knowledge and to purpose. He considers many aspects of the question, not the least interesting of which will be found to centre round Birth Control, Population and International Relations and Quality of Population. In a short review such as this notice is confined to, it is not possible to do full justice to the eminently fair spirit with which the author deals with the various points raised by him in the course of his dispassionate study of a difficult problem. He urges family limitation, on a wider scale, throughout the different social classes, as a method of checking undue multiplication. He thinks that the practice of this principle cannot end in race extinction, which, he says, should always be sought for in some decline of moral standards. Mr. Carr-Saunders is no pessimist. He does not, for instance, believe in the generally made statement that the world growth of population is likely soon to outstrip the world's food production. He deprecates gloomy forecasts of this kind, as they tend to encourage a fatalistic attitude. We agree that it lies within the power of the human race to dictate its own future in this matter.

One of the most instructive chapters in this book is, as we have said, the one dealing with population and international relations. "There is" he says "nothing mysterious about the advantage which numbers give. Behind the representatives of the big nations at the

international conferences are the big battalions. Numbers make possible the exertion of force." Big nations, he thinks, are tempted to wave the big stick. Difference in the strength of population and difference in the rates of increase in the population of different countries induce friction. The reactions these differences have are sometimes for the better and sometimes for the worse. Mr. Carr-Saunders cites the change in the relations of Great Britain and Ireland to prove his point. In 1824 the population of Great Britain was about 14 millions and that of Ireland a little under 7 millions. In 1921 the population of Great Britain was between 42 and 43 millions and that of Ireland something over 4 millions. A hundred years ago the population of Ireland was half that of Great Britain, now it is a tenth This change "has had no little to do," says the author, "with the change in the attitude of Great Britain to Ireland. Great Britain can now afford to do what was formerly impossible to work complacently upon the independence and possible hostility of Ireland." Mr. Carr-Saunders thinks that the growth of population in Canada and Australia would result in population problems of a kind which Great Britain escaped in the case of the United States by her "stupid mismanagement" of her relations with her American Colonists. The growth of population in these Colonies—Australia and Canada—would, our author thinks, result in their demanding a shifting of authority across the oceans to themselves to mark the shifting of the centre of gravity of the population. This seems to us at any rate a barren question, for the whole trend of Britain's Colonial policy in recent times has been such as to debar a suggestion of this nature. The only way in which problems of this kind—they are largely political in character—is to grant the fullest autonomy to the Colonies and Dependencies as they grow in strength and wealth and thus make them feel they are practically independent while their dependence is voluntarily acknowledged and not disowned in theory or in practice.

Mr. Carr-Saunders touches the great question of how far Franco-German relations would be affected by the different rates of growth in the population of these two countries. He goes fully with it but we have no space to go into it here. He says "The French have got to face the fact that there are, and will indefinitely continue to be, more Germans than Frenchmen, and the world has got to discover means of removing, or at least lessening the friction caused by this fact, which may otherwise lead to more wars—futile as they are found to be."

The position of Indians in South Africa and the question of Japanese trying to force through British territory are also discussed though only briefly, by the author. We do not see anything helpful, however, in his treatment of problems of this nature. How to avoid conflicts created by contact between races, widely differing in colour? That is the problem in a nutshell! Mr. Carr-Saunders does not stop to consider it. The mere lack of homogeneity cannot be the sole cause of conflicts. It is in the intellectual view point of the superior race that the reason has to be sought. Has religion, culture, nay education itself, failed to humanize the superiorly organized people of this world? Though in this and in other matters Mr. Carr-Saunders' work fails to give satisfaction to the critical student, it is still an eminently suggestive book and we should like to see it widely circulated in this country, where the great problems affecting population deserve closer attention and study.

Scenes and Characters from Indian History.

Compiled and edited by C. H. Payne. Published by the Oxford University Press, London and Bombay.

Mr. Payne has struck a new line in this brilliant little work His idea is to put before the reader the original writings of masters in History in their own setting. He had, we admit, well succeeded in his attempt. A small volume of readable passages from Alexander the Great to Aurangazeb, the Moghul, is something too good to miss for any one interested in Indian History. Mr. Payne should have spent no little labour and time in the compilation There is little to criticize in it, on the other hand, there is quite a deal to praise. The notes are throughout critical and even suggestive of acute scholarship. Mr. Payne, in the pursuit of truth, is not, we are glad to note, afraid to disagree even from a recognized historian of the type of the late Sir Vincent Smith. If we may suggest an improvement or two, we would venture to remark that, when the next edition is called for (it cannot, we think, be long delayed) Mr. Payne and the Publishers should see their way to include some illustrative maps, without which the selections cannot be easily followed. Perhaps the footnote on p. 217 made up of a quotation from Brooke in which the statement is made that the "keeper of the seal" of Sivaji was one 'Sambhu Oopadhua', that is to say, Sambha an Upadhya Brahman. This is avowedly based on an explanatory note of Irwin, which is not quite accurate. "Sambha Oopadhua" of Grant Duff does not mean "Sambha an Upadhya Brahman". There is no such class or sect of Brahmans known. "Upadhyaya" is a title given primarily to a "teacher", especially of Law and Nyaya Sastras Secondarily, it means who is a proficient in all matters of religion including Jyotisha or astrology In this sense "Sambha" would be the name and "Upadhyaya" would be the title by which he was known This, however, is a trifle of an error for which, we must add, Mr Payne is not personally responsible. Still we have taken the liberty to point it out, solely with a view to eliminate it in a future edition. Mr. Payne's book deserves the attention as much of historical scholars as of the general reader. It ought to attract the attention of our Indian Universities.

The Purpose of Education.

By St. George Lane Fox Pitt. New Edition. Published by the Cambridge University Press.

In view of the fact that we reviewed this book (its 4th edition) only last year in these pages, we will content ourselves in drawing attention to the characteristic preface that the author has supplied to this edition. That a fresh edition should be called so soon after the last shows how this thought-provoking work has told on the reading public. The author is strikingly original and impressive in his analysis of the true purpose of education. He holds that religion can be reconciled with science. The function of reason is to reconcile these to each other, thus proving the unity of what is supreme, both as intelligible and as desirable. As Emile Boutroux, in his admirable preface, puts it in such a doctrine as he writes in accordance with the soundest traditions of the human mind, the two principal tendencies of the human mind. We must revert to the new Preface and hasten to add that it is a significant protest

against reformers who urge an increased purchase-power of the nation, or at least a section of the people. Here is what the author says:—"The apologists of such 'reforms' do not seem to understand that an increase of purchasing power, whether it be granted by individuals or by the State, means nothing else than the legal endowment of certain people with mere exchangeable property. The State can, of course, create proprietory rights by legislative or executive action; yet it should not be forgotten that the fundamental sanction for the exercise of such creative powers must, in the end, depend upon the true welfare of the community as a whole. This important fact cannot be proved with impunity." Those who feel that all economic progress is a raising of the purchasing power of the people, have something here to think out for themselves. The author's treatment of economic problems is confessedly brief but it suggests lines of thought and action which every student of Economics should study for himself in the volume itself. It is too good to retail here in a short review. We commend the book both to Educationists and to Economists and more than all to Publicists in this country.

Taxation—The Nation's Business.

By Andrew W. Mellon. Published by the Macmillan Company, New York. Price $1 25.

At a time when taxation in this country is being considered from the point of view of modern methods and modern maxims, it is opportune to invite attention to Mr. Mellon's suggestive treatise of the American principles of taxation. Mr. Mellon not only outlines the facts which the American Treasury bases its programme but also sketches for us an interpretation of the ideas underlying its policy and the bearing of American thought on the well-being and prosperity of the community. He discusses in turn the fundamental principles of Taxation, Treasury policies, Revising of the taxes Surtaxes, Taxing energy and initiative, Estate taxes, Benefits of tax reduction, and Tax-exempt securities. Mr. Mellon has been Secretary of the Treasury in the U. S.A, and his inner knowledge of the working of the American system has been revealed to us in the spirit of an active administrator. Recent discussion on taxation in the U S A. has centred around the so-called "Mellon plan" but nowhere has there been available for the interested general reader a simple and non-technical discussion of the views of Mr. Mellon and his associates of the Treasury. The present publication—by the very official concerned in the "Plan"—supplies the want Mr Mellon's so-called plan is based primarily on economic rather than political considerations. A sound tax policy, according to it, must take into consideration three factors. It must produce sufficient revenue for government; it must lessen, so far as possible, the burden of taxation on those least able to bear it, and it must also remove those influences which might retard the continued steady development of business and industry on which, in the last analysis, so much of public prosperity depends. Furthermore, a permanent tax system should be designed not merely for one or two years nor for the effect it may have on any given class of tax-payers, but should be worked out with regard to conditions over a long period and with a view to its ultimate effect on the prosperity of the country as a whole. Mr. Mellon does not view taxation as a means of rewarding one class of tax-payers or punishing another. He is, it may be added, against high taxation, even if levied on an economic basis, because it will mean a high price level and high cost of living. The present policy of the American Government is summed up in two principles. One is the balancing of the budget and the other is the payment of the public debt. As a policy it would be the best for any progressive nation. Wars consume most of the wealth—three-fourth is the calculation—and so long as wars are popular, the cost of Governments cannot be reduced. Unusual and extraordinary expenditures should be avoided, and in view of the carrying change of the public debt, not only should such expenditure be strictly controlled but also the redemption of the debt itself should be insisted on. These are the principles urged by Mr. Mellon in working at a sound Treasury policy for his own country. Mr. Mellon, we note, urges the maintenance of the gold standard. He also suggests that a revision of taxation is necessary to keep expenditure generally within the limits of revenue raised and to remove vexatious interference with industry and for ensuring the even distribution of a reduction among all classes of people. Mr. Mellon would not favour surtaxes, as inimical both to industries and to revenue. He is also against any increase in Estates—*i.e.*, Inheritance—Taxes Inheritance tax has no basis in constitutional law, and rests, in his opinion, upon the theory of an excise tax. So, it has been imposed everywhere to obtain additional revenue in time of war and "should be preserved for such use in the future". Equality of opportunity to all being a fundamental political maxim, he is against the idea of an inheritance tax based on the idea of punishing wealth Monetary success, so long as it is kept within the limits of the moral sense of the community, ought not to be a crime. He would rather encourage it, for it would add to the wealth of the country and lead to an increase in the standard of living as a whole. Tax reduction should, in Mr. Mellon's opinion, be viewed solely from the angle of what is best for the country as a whole. Taxes, he insists, affect the entire country and there is no reason why their revision should ever be made a question of partisan politics.

The book is full of good meat and is a most topical one for India. We should be glad to see it widely read in this country. It is written in a style at once lucid and simple. Its expository character is not the least among the merits to which it can justly lay claim.

A History of the Mahratta People.

By C. A Kincaid, C.V.O., I.C.S. and Rao Bahadur D. B. Parasnis, Vol. III. From the Death of Shahu to the end of the Chitpavan Epic. The Oxford University Press, London and Bombay. Price Rs. 7.

This is the final volume in the series and it closes with the fall of Baji Rao II. The story is told in a sympathetic and in the main a just manner. The great point about Mr. Kincaid's effort is its eminently judicial temper. To an understanding of the great Mahratta nation, he combines a temperament to view its historical characters without bias of any kind. We do not propose to go into the ground covered by the authors in this volume. The story is so well told that the general readers should be recommended, in his own interests, to order a copy of the book and read it for himself. The comparison of Baji Rao's life after his surrender to General Doveton—Mr. Kincaid by the way has lost the beautiful story of how Baji Rao could not avoid his surrender to Doveton—and that of Napoleon at St. Helena is an

extremely interesting one and those who know the treatment meted out by General Lowe to the great Corsican will know how to appraise at its true worth the other Lowe at Bithur. There was as much in the temperament of Baji Rao to make for peace as there was in Napoleon to make for complaint. Mr. Kincaid deserves praise for the readable volumes he has produced on Maratha history. Their main interest will consist in the corrective they afford to Duff's famous, but somewhat partisan, narrative. If we may hazard a suggestion, it would be this:—An attempt must be made in the next edition to modernize the names of persons and places in these volumes. In the present volumes the old spellings are retained and they are a source of irritation to the reader. Such retention adds to the difficulty of intelligently following the narrative. Thus "Nandaraj" on page 89 of the present volume ought to be "Nanjaraj", "Onskotta" ought to be "Hoskottah" (page 93). "Malwagar" "Mulbagal", "Balapur" "Ballapur" (page 96), "Berads" on page 97 must be "Bedars" and so on.

American Trade with India.

The following statistical matter is based on cable received from the Department of Commerce, Washington, D.C.:—

EXPORTS AND IMPORTS.

Total exports from the United States, December, 1925	$ 468,645,000
Total imports into the United States, December, 1925	$ 397,945,000
Excess of exports over imports	$ 70,700,000
Total exports from the United States, year 1925	$4,900,900,000
Total imports into the United States, year 1925	$4,228,000,000
Excess of exports over imports	$ 672,900,000

Trade with India.

Exports to India from the United States, December, 1925	$ 3,973,000
Imports from India to the United States, December, 1925	$ 13,296,000
Excess of imports over exports	$ 9,323,000
Total exports to India from the United States, year 1925	38,282,000
Total imports from India to the United States, year 1925	$ 144,484,000
Excess of imports over exports	$ 106,202,000

Some of the more important items exported from the United States to India during December were as follows:—

Canned fruit	193,000 lbs.
Dyes	48,000 lbs.
Kerosene	3,780,000 gals.
Lubricating oil	796,000 gals.
Machinery, all kinds	$881,000
Tinned plate	2,937,000 lbs
Tinned sheets	15,775,000 lbs.
Tubes, pipes and fittings	7,935,000 lbs.
Bolts and nuts	410,000 lbs.
Automobiles	212
Automobiles (Canadian manufacture)	600
Trucks	46
Trucks (Canadian manufacture)	236

Some of the more important items *imported* from India to the United States during December were as follows:—

Burlap	15,989,000 lbs.
Jute	8,000 tons
Raw cotton	156,000 lbs.
Shellac	1,226,000 lbs.
Tea	1,070,000 lbs.
Mica	400,000 lbs.
Castor seed	5,042,000 lbs.
Manganese ore	1,000 lbs.

Trade with Ceylon.

Exports to Ceylon from the United States, December 1925	$ 416,000
Imports to the United States from Ceylon, December, 1925	$ 6,737,000
Excess of imports over exports	$ 6,321,000
Total exports to Ceylon from the United States, year 1925	$ 2,386,000
Total imports to the United States from Ceylon, year 1925	$ 48,159,000
Excess of imports over exports	$ 45,773,000

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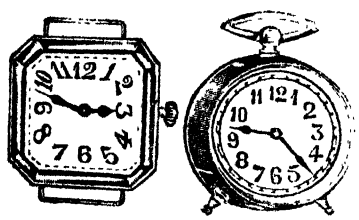
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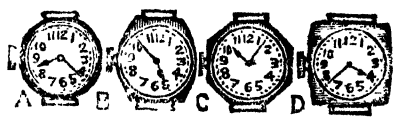
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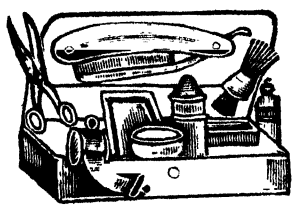
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ADDRESS.—*Editor, Mysore Economic Journal, Bangalore City P.O.*

Detailed Contents.

PAGE

THE ROYAL COMMISSION ON AGRICULTURE—
By "Rusticus" 137

THE INDIAN BUDGET FOR 1926-27—
By Sir Basil Blackett 139

CANADA AND THE GOLD STANDARD—
By Donald M. Marvin, B.A., M.A., Ph.D., Economist, The Royal Bank of Canada 148

KARACHI MUNICIPAL FINANCES AND ADMINISTRATION 153

ECONOMIC AND RURAL RECONSTRUCTION IN INDIA 156

EDUCATING THE LONDON POOR—
By Prof. M. K. Gidvani, M.A. .. 159

INDIGENOUS INDUSTRIES—
By Christopher Hay, M.A. .. 161

ADDITIONAL WATER-SUPPLY FOR BANGALORE—
By D. Madhava Rao, B.A., B.E., Municipal Engineer, Bangalore City Municipality 161

BRITISH INDUSTRIES FAIR .. 162

ECONOMICS IN THE WEST .. 165

CANADIAN TRADE AND FINANCE .. 168

FINANCIAL NOTES FROM LONDON .. 172

SESQUI-CENTENNIAL INTERNATIONAL EXPOSITION 174

INDIAN ECONOMIC NOTES .. 175

TOPICS IN THE JOURNALS .. 178

MISCELLANEOUS NOTES—
Wonders of the Cheirophone .. 158
American Trade with India .. 185

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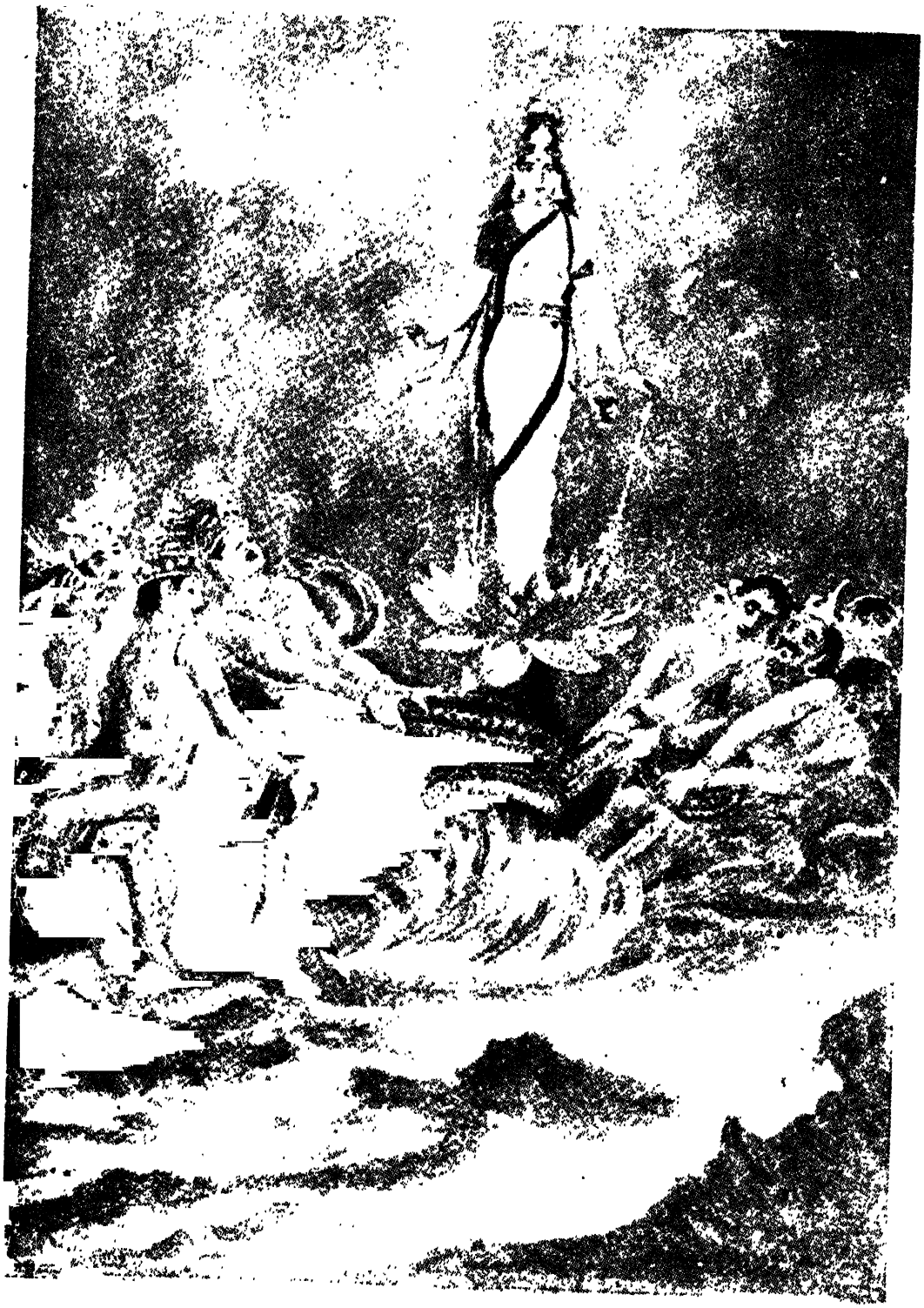
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The Rise of the Goddess Lakshmi.

The Mysore Economic Journal

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Vol. XII APRIL 1926 No. 4

The Royal Commission on Agriculture.

By "Rusticus".

The Government of India have taken a long time to announce the personnel of the Royal Commission on Agriculture doubtless because it has been no easy matter to get together the right men for what is undoubtedly one of the most important, though not one of the most spectacular, enquiries which has ever been set on foot in India. On the whole, they have been distinctly successful in their quest. The Marquess of Linlithgow, who is to preside over the Commission, will certainly not be an ornamental figurehead. That he is President of the Edinburgh and East of Scotland College of Agriculture and also a Fellow of the Royal Society of Edinburgh shows that he takes an active interest in both the practical and scientific aspects of agriculture. The Government of India are even more to be congratulated on their other acquisition from Great Britain. We doubt whether there is any greater living authority on British agriculture than Sir Thomas Middleton and he has the additional qualification of first hand acquaintance with Indian conditions. It is true that it is not very recent for he was Professor of Agriculture at Baroda College as long ago as 1889-1896 but it will stand him in good stead, for he will find that, though there has been great progress in many directions, things have not changed as much as they should have done in thirty years. Since he left India, Sir Thomas has held a long succession of professorial and administrative appointments. He has been Lecturer in Agriculture at Aberystwyth and Professor of Agriculture at Durham and at Cambridge. In 1906 he became Assistant Secretary to the Board of Agriculture. During the war he rendered distinguished services as Deputy Director-General of Food Production and he is now Commissioner under the Development and Road Improvement Funding Act. The three Indian Civilians who have been appointed to the Commission are all men of wide experience of the problems with which it will have to deal. Sir Henry Lawrence, who, at the moment, is acting as Governor of Bombay, was for many years Director of Agriculture in the Province of which he is now the head. The work of Sir James Mackenna as Agricultural Adviser to the Government of India, has frequently been referred to in these columns. The material collected and the conclusions arrived at by the Indian Cotton and Sugar Committees of which he was President should be of the utmost value to the Commission. We anticipate that Mr. Calvert will prove one of the most useful members of the Commission. He is the doyen of the Registrars of Co-operative Societies and knows more about co-operation and rural economics generally than any one in India. With profound knowledge he combines a peculiar insight into the viewpoint of the Indian peasant. Of the Indian members the outstanding name is that of Sir Ganga Ram. After retiring from the Public Works Department at an age at which most men would have felt justified in settling down to a life of leisured ease, Sir Ganga Ram proceeded to give the Punjab an ocular demonstration of the way in which agriculture can be made to pay by the adoption of up-to-date methods. The Raja of Parlakimedi is an enlightened zamindar from Madras. Of Mr. Sitaram Kamat we know nothing beyond what is stated

in the Government announcement which is that he is a member of the Bombay Agricultural Board. Dr. Hyder, the Professor of Economics at Aligarh University, has already done much useful work in economic enquiries whilst Professor Nagendranath Gangulee, who is Professor of Agriculture and Rural Economy at the Calcutta University, has the satisfaction of feeling that his own writings have contributed to the appointment of the Commission of which he is now a member.

As to the work which lies before the Commission let the terms of reference speak for themselves. They are: "Generally, to examine and report on the present conditions of agriculture and rural economy in British India and to make recommendations for the improvement of agriculture and the promotion of the welfare and prosperity of the rural population. In particular, to investigate (*a*) the measures now being taken for the promotion of agricultural and veterinary research, experiment, demonstration and education, for the compilation of agricultural statistics, for the introduction of new or better crops and for improvement in agricultural practice, dairy farming and the breeding of stock; (*b*) the existing methods of transport and marketing of agricultural produce and stock; (*c*) the methods by which agricultural operations are financed and credit afforded to agriculturists; (*d*) the main factors affecting rural prosperity and the welfare of the agricultural population and to make recommendations."

It will be seen that the field of enquiry is a vast one. The Commission is specifically excluded from making recommendations regarding the relations between landlords and tenants and the assessment of land revenue and irrigation charges but, with these exceptions the importance of which it would be a mistake to minimize, there are few, if any, questions affecting the rural population of India which do not fall within its purview. In fact it may be doubted whether the field is not too extensive for any Commission, however able its personnel, to cover and whether more practical results would not have been obtained by following the precedent of the Cotton and Sugar Committees and appointing Committees to investigate particular crops such as millets and oilseeds and also particular questions such as those connected with the use of import and export of manures. Possibly now that agriculture, co-operation and veterinary matters are transferred subjects, the day for such Committees has passed and it is only the weight which attaches to the recommendations of a Royal Commission which will arouse some of the Provincial Governments from the lethargy which has fallen on them in regard to their agricultural departments. The Commission has no easy task before it in deciding how far the Government of India can assist without controlling the activities of Local Governments who are not unnaturally jealous of any encroachment on their powers. The relations which exist between the Central Cotton Committee and the provincial agricultural departments will be worth examination in this connection, for they seem to show that a satisfactory solution of the problem should be possible. There is one question which, though it is not explicitly referred to in the terms of reference, is implicit throughout them and that is the fragmentation of holdings. The smallness and the increasing sub-division of the agricultural holding in India is one of the main factors which affects the rural prosperity and the welfare of the agricultural population. Only if the Royal Commission can make some practical suggestions for remedying the evils wrought by fragmentation will it have justified its appointment. If it fails to do so, we have no hesitation in saying that it will leave the agricultural problems of India exactly where it found them.

Dr. E. Fournier d'Albe draws a lively picture of the development of medicine by 1950. It will have disappeared by then as a specialized craft! The laws of health will be known to all, and the few really specific drugs will also be universally known. Surgery, however, is going to expand, marvellously. This is a strange prediction in view of the fact that no doctor attempts to treat himself. If anyone could consult the notes of Harley-street specialists he would probably find that as many qualified practitioners as laymen figured as claimants to diseases they do not possess. In spite of the adage, few people are doctors at forty, or any other age. It seems unlikely that mankind as we know it will ever be able to treat itself; but there certainly should be much less serious disease and infection. Prevention is bound to grow.

—*The Westminster Gazette.*

The Indian Budget for 1926-27.

By Sir Basil Blackett. *

The following is the complete text of that portion of Sir Basil Blackett's speech to the Legislative Assembly at Delhi, which relates to the Budget Estimates of Income and Expenditure for the year 1926-27:

Reforms of Military Accounting.

The form in which the detailed military estimates will be placed before the House has not been materially altered as has been done in the case of the Civil estimates, and the changes are confined to a more logical rearrangement of minor heads. As Honourable Members are aware a Committee has been appointed to investigate the system of Cost Accounts at present in force in the Army, with a representative of the Public Accounts Committee of this House among the members. Our experience of the present system of cost accounts during the last four years and the fact that the British Government have recently decided to introduce radical modifications into the system of cost accounting in the British Army, led us to the conclusion that such an enquiry had become necessary in India. Material changes in the form of the military estimates have, therefore, to be postponed pending the examination of the recommendations of that Committee. Fuller explanations have, however, been given of the various details of the military estimates in view of the desire expressed in the course of the budget debates last year by members of this House.

Reduced Military Expenditure.

The net military expenditure for the year 1926-27 is estimated to amount to 54.88 crores, *i.e.*, a reduction of 1.37 crores as compared with the Budget estimates for 1925-26 thus marking a further stage in advance towards the goal set by the Retrenchment Committee. The provision for established charges amounts to 54.24 crores, the balance representing remnants of special post-war charges. The figure of 54.88 crores includes a sum of 66 lakhs for the payment of gratuities to demobilized officers, this being the last year which will be burdened with a charge of this character. 23 lakhs have been provided for the completion of the building programme in progress in Waziristan and for the Royal Air Force. On the other hand, we appear for the moment to have come almost to the end of the surplus war stores which have been a feature on the credit side of the account for some years past. We are allowing for a credit of only 25 lakhs under this head as compared with 70 lakhs in the Budget estimates of 1925-26 and 110 lakhs in 1924-25. The figure of 54.24 crores net for established charges includes a sum of approximately 60 lakhs for new urgent measures mainly of a non-recurring nature for the purchase of new equipment.

British Cavalry Regiment Gone.

Among the more salient features in the new estimates I may mention first the disappearance of provision for one British Cavalry regiment, costing a sum of 22 lakhs a year, which has now been dispersed with, this being the last of the specific reductions of strength following on the recommendations of the Retrenchment Committee which remained to be carried out. Charges for pensions in India and in England show a recurring reduction of 37 lakhs, while payments to the War Office for British transport charges have been brought down by 17 lakhs. It has been necessary to provide an additional 20 lakhs owing to higher prices for articles of food and forage, and an additional 29 lakhs is also included for the purpose of accelerating the programme of electrification of barracks and of building of new lines for Indian troops. As a set-off to this last liability, an additional credit of 20 lakhs is anticipated from the disposal of surplus military lands and buildings.

Details of Other Reductions.

Our total expenditure on military services including the Army, Marine, Military Works, and the Royal Air Force, amounted in the year 1920-21 to 87.4 crores net, of which about 20 crores represented special expenditure on operations in Waziristan. With the cessation of these operations, the Budget estimates for 1922-23, which formed the basis of the Retrenchment Committee's investigations, showed a net total expenditure of 67.75 crores. The recommendation of that Committee was that the Budget for 1923-24 should be fixed

* Speech delivered in the Indian Legislative Assembly on March 1, 1926.

at 57¾ crores subject to such additions as might be necessary in view of the delay which would ensue in carrying out the changes recommended and in order to meet special expenditure in Waziristan, etc. The Committee went on to say that for subsequent years the adoption of their recommendations should enable the estimates to be reduced to 57 crores, irrespective of savings due to further economies or fall in prices, and they expressed the opinion that continuous efforts to ensure further reductions should, in combination with the expected further fall in prices, enable the military budget to be reduced to 50 crores net after the lapse of a few years. The actual expenditure of the year 1923-24 amounted to 56.23 crores and the first stage of 57 crores mentioned by the Retrenchment Committee was thus passed in the first year. The figure of 56.23 crores included heavy expenditure on gratuities to demobilized officers and in Waziristan, but these abnormal items were counterbalanced by credits from the proceeds of sale and utilization of surplus stores. The Budget for the year 1923-24 allotted a net sum of 62 crores for military services. This was reduced in the Budget for 1924-25 to 60¼ crores but by the time when the Budget for 1925-26 was under consideration the actual effect of the retrenchment operations, which it had been difficult to gauge in advance, had become apparent, and it was possible to reduce the budget provision for 1925-26 to 56.25 crores net.

The following table brings out the results achieved at a glance :—

NET EXPENDITURE ON MILITARY SERVICES.

(In crores of rupees.)

	1921-22	1922-23	1923-24	1924-25	1925-26	1926-27
Budget estimate..	66·82	67·75	62·00	60·25	56·25	54·88
Revised estimate..	69·35	67·09	59·74	56·33	56·28	..
Actual expenditure ..	69·81	65·27	56·23	55·63	..	..

These figures include certain disturbing items both on the credit and debit side, and it is, therefore, of special interest to compare the true figures of the established charges, that is, the normal cost after elimination of special charges such as those for demobilization of surplus officers and special credits for the eating down of surplus stores. In comparing these figures with the figures given by the Retrenchment Committee, Honourable Members should bear in mind the fact that certain charges amounting in 1926-27 to 39 lakhs, of which the most important are the charges for Customs duty on imported stores and the cost of Stationery and Printing, have been added to the military estimates since 1923-24, as the result of new decisions regarding classification

Adjusted figures of Established Charges.

(In crores of rupees.)

	1923-24	1924-25	1925-26	1926-27
Estimate	61·9	59.4	55.0	54·2
Actuals ..	56·7	55.8	55.2	..

(revised estimate.)

LORD RAWLINSON'S GREAT WORK.

I cannot allow this opportunity to pass without referring once again to the deep debt of gratitude which I owe to the late Lord Rawlinson for his wholehearted co-operation and earnest determination to secure economy in expenditure on military services. His untimely death meant a grievous loss to me—I lost a personal friend and a colleague to whom I owed more than I can say - and India lost a true friend. The ideal at which he constantly aimed was an Army in India not larger than he regarded as absolutely essential in India's interests, adequately equipped and fully trained, so that India might obtain the maximum service from a fully efficient force at the minimum cost. Our military expenditure was kept during his regime under constant scrutiny by the Finance and Army Departments with the object of securing further economies. I gladly add that this policy has been continued under his successor and has the full support of His Excellency Sir William Birdwood. I am confident that adherence to this policy will result in still further reductions in our military expenditure without the sacrifice of that essential security which must always be our first aim.

REDUCTIONS IN STOCKS.

We are fortunately able to foresee considerable savings of an automatic character in our established charges in future years as the result of the reduction of the rates of pay of the British soldier which came into effect in October 1925. The immediate saving for 1926-27 under this head is not appreciable as the reduced rates of pay affect only new recruits, but it is estimated that, taken in conjunction with the reductions below present cost which will in due course result from the recent revision of the pay of officers in July 1924, the savings from this source should

amount to 12 lakhs in 1927-28, increasing annually to about 80 lakhs in 1930-31, and about 1¼ crores in 1933-34. Before leaving the military estimates, I must refer briefly to the question of stocks held by the Army on which I commented last year. During the course of the year the whole question has been completely examined and considerable modifications are necessary in the figures then given which were based only on information available at headquarters. A full statement of the balances now disclosed will be found in the volume of detailed estimates. The amount of stocks held proves to be appreciably in excess of the amount indicated in the figures placed before the Retrenchment Committee, and of those on which we have hitherto been working. One of the terms of reference to the expert committee of enquiry into the arsenals and ordnance depots which I mentioned earlier in my speech, is the examination of surplus and obsolete stocks, and I have little doubt that a further reduction will be effected as the result of this enquiry.

Civil Expenditure.

I now turn to our estimates of Civil expenditure. The total figure of Civil expenditure in the revised estimates for 1925-26 is 41.46 crores; the corresponding figure for 1926-27 is 41.76 crores. This small increase, which amounts to 30 lakhs, conceals a big decrease. In 1925-26 we had a big non-recurring credit, originally estimated at 1.29 crores but now ascertained in the revised estimates to be 1.81 crores, on account of the transfer of postal and telegraphic stores (including the stores of the Indo-European Telegraph Department) from Revenue to Capital. The chief feature of the expenditure of 1926-27 is the reduction, whose significance I have already endeavoured to explain, of approximately 1 crore in the charge for interest. For market debt the charge for interest in 1926-27 shows a reduction of 1.79 crores on the current year's figures, partly because of the effects of our conversion loan and partly because we were able to finance all our own capital expenditure including railways and the capital expenditure of Provincial Governments without adding to our market debt. On the other hand, there is an increase of 75 lakhs under interest on miscellaneous obligations which includes interest on provident and similar funds, savings bank deposits, cash certificates and unfunded debt generally. The net reduction in interest charges is, therefore, as already stated, about one crore.

Reduced Opium Expenditure.

A drastic reduction of the area under cultivation in the United Provinces by one-third results in a considerable reduction in our expenditure on opium. A further reduction is anticipated in the near future as the result of the substantial reduction in the prices paid to cultivators. These steps had already been taken, in consideration of the large surplus of stocks that we at present hold and of future requirements, before we arrived at the decision announced recently to recommend to the Legislature a policy of progressive reduction and eventual extinction of our exports of opium. On this important question of policy I need say no more at the present moment beyond drawing attention to the fact that it foreshadows the progressive reduction and eventual disappearance of a head of revenue which at present brings us in approximately 2 crores a year.

Expenditure on "Beneficial Services".

Our estimates of Civil expenditure include increased provision for what I may call beneficial services. I drew attention a year ago to the increase in the current year's estimates under these heads and a recent debate showed that the House shares the view of the Government of India that some addition to expenditure in these directions is both desirable and proper, and that the Finance Department's motto of wise expenditure within our available resources and avoidance of waste rather than retrenchment at all costs is endorsed by public opinion. Among new items and increases in existing items of expenditure on beneficial services included in the Demands for Grants, I may mention an enhanced grant of 6¾ lakhs to the Indian Research Fund Association, an increase of about a lakh for education in the North-West Frontier Province, as well as a non-recurrent grant of about 1¼ lakhs for a new building for the Government High School at Peshawar, a further grant of Rs. 50,000 for the construction of the Victoria Hospital at Ajmere and a smaller grant towards Dr. Shroff's new Eye Hospital in Delhi. We have increased the grants to the Benares and Aligarh Universities by Rs. 25,000 each and that to Delhi University by Rs. 10,000 and have provided 2 lakhs each as the first instalments of non-recurring grants to the two first named Universities. Additional funds have

been provided for research at Combatore, Pusa, and Muktesar, and for the development of the Dairy Farms at Bangalore and elsewhere and of the Anand Creamery recently taken over from the Military Department, and further provision has been made towards the completion of the new Forest Research Institute at Dehra Dun, where over 60 lakhs out of a total sanctioned programme of over a crore has already been spent.

Provision for Debt Reduction.

The provision for reduction or avoidance of debt in accordance with the plan set out in the Government of India Resolution dated the 9th December 1924 requires 1.83 crores in 1926-27 or practically the same figures as in 1925-26. The Government of India propose, however, to make two changes which affect the total amount of expenditure under this head in 1926-27. Two years ago on the passing of the amendment to the Sea Customs Act the practice was introduced of adding to the provision for reduction or avoidance of debt a sum equal to the Customs Duty on stores imported on capital account including stores for the use of State-managed railways. I promised a year ago to re-consider this practice in the light of criticisms raised in regard to it in this House. There are objections in principle to inflating revenue at the expense of capital. Our object in amending the Sea Customs Act and making Government stores liable to duty was clearly not to increase the Customs revenue at the expense of our capital charges. I recognize, however, that there are arguments which can be brought forward on the other side in view particularly of the fact that the railways pay a contribution to general revenues on the basis of their capital expenditure including whatever may have been paid in Customs Duty and that railway rates and fares are calculated with reference to the capacity of the railways to earn profits on the whole of their capital expenditure. We have, therefore, decided to meet the views expressed by critics in this House a year ago and omit this portion of the provision for redemption of debt. An opportunity for reconsidering the whole question can be taken at the expiry of the five-year period for which the Debt Redemption scheme is in force.

German Reparations.

The second proposal which the Government of India are making in this connection will be found enshrined in a clause in the Finance Bill dealing with the disposal of the sums received by India from Germany on Reparation account. These sums represent India's share of the amount allocated to the British Empire out of the Dawes annuities. The actual allocation is full of complications. The payments by Germany for all treaty charges under the plan adopted vary from 1,000 million gold marks at the start to 2,500 million gold marks in the fifth year thereafter they are to be fixed; at the latter sum together with a supplement computed according to an index of prosperity. The annuities are payable in German currency and the amount to be transferred to Germany's creditors outside Germany has to be decided by a Transfer Committee with reference to the capacity of Germany to make deliveries in kind or in cash without endangering the stability of the mark. Before the total amount so transferred outside is distributed, a number of charges have to be deducted including for example, the cost of service of Germany's £10 million external loan, the cost of the Reparation Commission, the amounts allocated towards the payment of the Army of Occupation and of the Belgian War debt, and other items. The exact amount available for distribution is thus at all times problematical and extraordinarily difficult to forecast. The British Empire as a whole receive 22 per cent of the total sum available, and India receives 1.2 per cent of the British Empire's share. The best calculations that I have been able to make, which necessarily are based on somewhat arbitrary assumptions, point to an annual receipt by India over the next few years of sums varying between a minimum of £66,000 and a maximum of £250,000. In 1924-25 we received £37,400 and we expect to receive about £66,700 in 1925-26. The present estimate of receipts in 1926-27 is about £120,000.

How the Reparations are Applied.

The reparation receipts may be said broadly to cover in the case of India one or other of the following classes of expenditure: (*a*) pensions and allowances payable by the Government to war sufferers: (*b*) expenditure incurred in replacing losses by enemy action or in repatriation of enemy nationals: (*c*) compensation payable to private persons and local bodies. So far as expenditure on replacing stores lost by enemy action and the cost of repatriation of enemy nationals are concerned, the receipts represent recovery of expenditure previously incurred by the Government. Such expenditure added to the deficits of past years and was in effect met from borrowed funds. Recurring expenditure

is still being met by the Government in respect of pensions and allowances. Some part has already been covered but the major part will come in future years. The receipts which the Government now obtain from the Reparation account represent a contribution towards the capitalized value of such payments. The compensation payable to private persons and non-Government bodies stands on a different footing. The receipts on this account are not really receipts of the Government of India except in a technical sense

For Debt Reduction.

It seems reasonable to utilize receipts from Germany under all but the last head for reduction or avoidance of debt rather than to treat them as an ordinary item of revenue Only by this procedure will there be annual savings in interest in future to correspond to annual payments on account of pension. The Government propose, therefore, that payments for compensation shall be deducted from the total reparation receipts and applied for the purpose for which they are intended, and that the balance of our reparation receipt shall be devoted to the reduction or avoidance of debt. By thus applying these special receipts, the Government will, I think, be following the procedure which is most in accordance with financial propriety, and we shall at the same time avoid disturbance in our own Budget estimates arising out of the fluctuating and uncertain character of these receipts. This proposal and the proposal to bring to an end the practice of setting aside for debt purposes a sum equal to the Customs duty on stores imported on capital account, are intended to be taken together. The result of the two proposals combined will be to relieve our revenues of a charge of about 7 lakhs if our estimate of receipts on reparation account is approximately correct.

Customs Duty on Government Stores.

This may perhaps be a convenient point at which to mention that we are continuing for 1926-27 the assignments on account of Customs duty on Government stores introduced as a temporary measure two years ago to those Provinces which have not yet obtained a reduction in their contributions to the Central Government. The only important item in this connection is a sum of 5.59 lakhs payable to Bombay., It is obviously desirable that these assignments, which are objectionable in principle, should be extinguished at an early date and we propose very shortly to take up this question in connection with the examination of the Report of the Taxation Enquiry Committee recently published, with special reference to their proposal for modifying the existing Devolution Rule 15 in regard to the payment to the Provinces of a share in Income-tax receipts.

Revenue, 1926-27.

I now turn to the estimates of our revenue. It is necessary to anticipate some diminution in the imports of sugar, but we may reasonably look for compensation for the sums thus lost in increased receipts from duty on cotton piece-goods and in what I may call the normal growth under other heads. On this basis the net revenue under the head of Customs is estimated at 48.15 crores, or, an increase of 1.30 crores over the revised estimate for the current year. This figure includes 1.75 lakhs of revenue from the Cotton Excise Duty. This may be regarded as a fairly conservative estimate of what the yield from the duty would be if it were continued. The yield in 1924-25, the last year in which the duty was fully collected, was 218 lakhs, while the highest figure during the last six years was 251 lakhs.

Taxes on Income

The main change in the trade conditions of 1925-26 as compared with the previous year is that the cotton mill industry in Bombay has passed through what I hope will prove to be the period of its severest depression. We have to allow, therefore, for an appreciable reduction in our revenue from Bombay under the head of Taxes on Income. Conditions elsewhere have been on the whole better than in the previous year and our administration is increasing all the time in efficiency. We have adopted for 1926-27 a figure of 16.15 crores of receipts under this head or 10 lakhs less than our revised estimate for 1925-26. This represents 1.20 crores less than the Budget estimate for the current year.

Salt and Opium.

I estimate our receipts under the head Salt at the figure of 6.90 crores, which assumes that accumulated stocks will have been worked down by the end of this month.

The gross receipts from opium are estimated at 59 lakhs below the revised figure for 1925-26 which included a large adventitious receipt under Excise opium owing to the taking over by the Provincial Governments of stocks held at treasuries. The net receipts are estimated to be practically the same as

this year, namely 2.26 crores owing to reductions in expenditure already referred to.

Railway Contribution.

As the House is aware, the total contribution from Railways to general revenues during 1926-27 is estimated at 6.01 crores. This represents simply the amount of the fixed contribution based on the actual receipt for 1924-25 which was a particularly profitable year. It assumes that the net gain from Railways, after deducting the contribution, will not exceed 3 crores and will accordingly be transferred in full to the railway reserve.

Post and Telegraphs

The working expenses of the Indian Posts and Telegraphs Department for 1926-27 are estimated at 10.17 crores, or 61 lakhs more than in 1925-26. The growth of working expenses is due in part to the absence of the non-recurrent features which, as already explained, made the figure of 1925-26 less than the normal, and in part to an increase in expenditure amounting to 10 lakhs due to the decision of the Railway Department to withdraw the concession of free railway passes to postal employees, and to the inclusion of a provision of about 19 lakhs for new measures designed to improve the emoluments and terms of service of the postal and telegraph staff. The concessions in the case of the postal staff involve an addition of 15 lakhs to our expenditure. The gross receipts have not kept pace with the increase in expenditure and we can expect an improvement of only 11 lakhs, making the total of our gross receipts for 1926-27, 10.65 crores as compared with 10.21 crores in 1925-26.

Loss on Telegraphs and Telephones.

The Post Office account alone shows an estimated profit of 20 lakhs, but there is a loss of 20 lakhs on the Telegraphs and of 10 lakhs on the Telephones, owing largely to the fact that the charge for interest is proportionately heavier in the case of the latter services. The upshot is that the estimates of the year point to a loss of approximately 10 lakhs on the working of the department as a whole. I have, however, every confidence that a revival in trade will lead in due course to a considerable addition to our revenue from telegrams which has recently been disappointingly low, and that by next year the department will be completely self-supporting. To complete the picture I must add that owing to a reduction in traffic we expect in addition, a loss of 6.7 lakhs in 1926-27 on the working of the Indo-European Telegraph Department.

No Postage Reductions Possible.

The House will observe that in face of these figures it is impossible for us to contemplate any reduction this year in the rates for letters and postcards– a subject on which after an interesting debate in this House a few weeks ago further discussion was adjourned in order that the whole matter might be considered in its proper setting in connection with the budget figures. The wisdom of the course then taken is now apparent. Such a reduction of charges as was then under consideration is clearly impossible unless the taxpayer is to be saddled with the burden of a heavy subsidy in relief of the customers of our postal and telegraph system. I know that a return to pre-war rates is keenly desired in many quarters in the House and in the country; nor would the Government desire to oppose such a reduction for a moment if they believed that it was within the range of practical politics. I desire, however, to put the question frankly before the House. There is in my view no probability whatever of a return to pre-war rates for letters and postcards except at the cost of a heavy and steadily increasing subsidy from the pocket of the taxpayer. It is desirable that we should face the facts boldly and not deceive ourselves or others by holding out false expectations.

Price Levels in India.

The truth is that we are confronted by what I may call a secular change in conditions in India. The very cheap rates of postage to which India had become accustomed before the war were possible only because of the very low level of prices in India as compared with other countries. The last three-quarters of a century have witnessed a steady rise in the average level of prices throughout India—a rise which was the natural and inevitable outcome of the far-reaching changes which were gradually making their effect felt on the conditions of life in India. I may illustrate these changes with reference to figures of index numbers of prices going back to 1860. If we take the figure for the average of the year 1861 for wholesale prices in the United States and India as 100, the increase in the year 1924 in the case of India is represented by a figure of 251 and in the case of the United Kingdom by a figure of 142. If we go back only as far as 1914 and compare pre-war with present prices, the increase in India

is from 100 in 1914 to 163 at the end of December 1925. The corresponding increase in the United States is from 100 to 158, and in the United Kingdom from 100 to 153. In the face of these figures, which, whatever doubts we may have as to the absolute accuracy of the calculations on which the index numbers are framed, are at least a reasonable guide to the general trend of events, it is impossible to expect that the Indian Postal Department should be able to carry letters or postcards at the rates prevailing in 1860 or even in 1914. We cannot expect wages and expenses to stay at a level below the average rise in prices generally. Unless, therefore, the future holds out the prospect of a considerable further fall of prices to at least the 1914 level—a development which would probably be undesirable in the general interests of India's prosperity—we must admit the logical conclusion that the day of the 3 pie postcard and the 6 pie letter is past beyond recall. Much as we may regret this inevitable conclusion, it is better that we should cease to delude ourselves with unrealizable hopes and should set ourselves to secure the maximum efficiency and the greatest possible facilities to the public from the department as things are to-day.

Interest on Currency Reserves.

Our estimates of revenue assume the continuance of the practice of appropriating to revenue the interest on the Paper Currency Reserve and the surplus of the Gold Standard Reserve over 40 million. We may, I think, assume that, whatever changes may be introduced as the result of the recommendations of the Royal Commission on Currency, the profit now obtained by the Government from these Reserves, whatever form they may assume, will not be substantially affected. In regard to other heads of receipt, extraordinary income from enemy ships will no longer accrue to us, and it is necessary to estimate interest receipts on a lower scale than this year.

Ultimate Results.

We are now in a position to frame our balance sheet. The total estimated revenue for 1926-27 amounts to 133.43 crores, and the total estimated expenditure amounts to 130.38 crores. We are left with a surplus of 3.05 crores. I hasten to remind the House that the latter figure includes the sum of 1¾ crores for receipts from the Cotton Excise Duty.

To what extent can we regard this surplus as being free for us to dispose of? How far is it a recurring surplus? The House will observe that I have made no reference except in a very incidental way to the Report of the Taxation Enquiry Committee, or to the proceedings of the Royal Commission on Currency. The former's report has only recently come into the hands of members, and though incomplete copies have been available to the Government for a somewhat longer period, we came to the conclusion that the extremely interesting and instructive material which it provides demands more prolonged and more complete examination than was possible in the time at our disposal. I have, therefore, included in this Budget no suggestions for modification of our taxation system in the light of the Committee's recommendations. Their recommendations will give all the Governments in India and their legislatures ample material for reflection in the course of the coming year. The report is, I think, a most valuable addition to our knowledge of the Indian taxation system, and in the compass of one volume we have here a complete survey of all the taxation at present imposed. Important additions to our understanding of the problem of the relation between Central and Provincial taxation are made in many passages in the Report. I take this opportunity to-day of thanking Sir Charles Todhunter and his colleagues for the hard labour which they have devoted to mastering their subject and for the instructive report which they have placed before us. So far as the present Budget is concerned, however, we are justified in assuming that, whatever decisions may be arrived at in the light of the recommendations of the Taxation Enquiry Committee, they will not affect the question of the disposal of the year's surplus.

Exchange Taken as at 1s. 6d.

The same assumption must be made in regard to the work of the Royal Commission on Currency. Our estimates assume the continuance of the present credits to revenue of the interest on Currency investments. They also assume an average rate of exchange of 18*d.* for 1926-27. It is impossible to anticipate the conclusions of the Commission and equally impossible, besides being very undesirable, to set aside any portion of the year's revenue as an insurance fund against possible repercussions on our Budget position in future years. Nor have we any present reason for regarding such an insurance as requisite,

Miscellaneous Items.

In regard to other items in the Budget we have to remember that the receipts from Railways in 1926-27 are high; the earnings of the year 1925-26 were not as good as those of the previous year, so that our fixed contribution from Railways in 1927-28 may be less by as much as 79 lakhs than in 1926-27 if the actual figures for Railway receipts for 1925-26 confirm our revised estimate. Our opium revenue is also an uncertain factor. The net revenue fluctuates within rather wide limits and at times may even increase owing to sudden decreases in expenditure following on reductions in the area cultivated and in the price paid, but the progressive elimination and eventual extinction of our opium revenue has to be assumed. There is, however, no reason to think that this loss of income which must necessarily be spread over a period of years cannot be counterbalanced by growth of revenue in other directions. Our Income-tax revenue is exceptionally low at the moment and may certainly be counted upon to give a considerably increased yield in later years. Finally, we look for further economies in our military expenditure which still contains special items of a non-recurrent character.

A Recurring Surplus.

After giving full weight to these various considerations, we have come to the conclusion that there is no undue risk in treating the whole of our surplus as a recurrent one. I have already confided to the House the secret that the Finance Bill includes provision for the final abolition of the Cotton Excise Duty, and the privilege of sharing with the Government in the credit for this historic achievement will belong to the Legislature when the Finance Bill is passed. This leaves us with a divisible surplus available for other purposes amounting to 130 lakhs. The House will, I feel sure, have no hesitation in agreeing that past expressions of policy and the truest interests of the people of India alike demand that, after using 1¾ crores of the sum at our disposal for the reduction of Central taxation, we should devote as much as we can of the rest to the relief of the Provinces. We accordingly propose to apply 125 lakhs to the further reduction of the provincial contributions in accordance with the Devolution Rules. The relief thus afforded will go to the extent of 57 lakhs to Madras, 33 lakhs to the United Provinces, 28 lakhs to the Punjab and 7 lakhs to Burma.

Provincial Relief.

The total of the Provincial contributions fixed under the Meston Settlement was 9.83 crores. A year ago we made a permanent reduction of 2½ crores and provided 63 lakhs for the continuance of the temporary remission of Bengal's contribution. With the additional 1¼ crores set aside now, we shall have reduced our reliance on the Provinces by 4.38 crores in all, which is not very far short of half the total. The Provinces whom fortune and the Devolution Rules favour this year are (apart from Bengal) the same as those which obtained the biggest benefit a year ago. But the turn of the other Provinces will come. They are all brought much nearer fruition by the events of the last two years and will no longer feel that the prospect of remission does not interest them. Meanwhile the taxpayers, if not the Government of the Province of Bombay in particular and of other Provinces in a lesser degree, secure the benefit of the repeal of the Cotton Excise Duty, the relief given in this Budget being divided between the Central taxpayer and the Provincial Governments.

Retrospect

At an earlier stage in my speech, the approaching end of the life of this Assembly tempted me to compare the figures of India's debt now with those of three years ago. Before closing let me indulge in a further glance backwards and a glimpse on to the future. The first Assembly was burdened with the ungrateful task of imposing extra taxation in order to bridge the yawning gap between revenue and expenditure, a task that at one time seemed well nigh hopeless. The Budget of 1924-25 which coincided with the first session of this House signalized our definite escape from the era of deficits and brought the Salt tax back from Rs. 2-8 a maund to the present rate of Rs. 1-4. For this reduction, though no doubt it had the assent of the majority, only the minority in this House who voted for the second reading of the Finance Bill can claim to share the credit with the Government and the Council of State, and the Government did not conceal their view that a higher rate, which might have enabled us by now to have achieved the complete extinction of the Provincial contributions, had much to commend it. But, this House dealt in a step-motherly way with the Budget of 1924-25, it placed to its credit six months later the convention in regard to the separation

of railway finance from general finance, a reform which I regard as the greatest financial achievement of the years under review.

Financial Advances.

We have made other advances in our financial machinery during this period, such as the establishment of the Provincial Loans Fund and the formulation of a clear policy of reduction and avoidance of debt, and we have paved the way for other advances, as for instance, the separation of Accounts and Audit, and the reform of the Indian currency system. We have, moreover, greatly improved the mechanism of the Assembly's financial control. But the new arrangement for dealing with our Railway Budget remains the outstanding feature. It has cleared the path for a continuous programme of railway construction and rehabilitation and is the direct parent of the proposals for progressive reduction of rates and fares which has now been put in hand, while it has relieved our general finances of an intolerable burden of uncertainty. The Delhi session of 1925 found the Government and the Assembly working together, as you, Sir, will remember, to put the finishing touches to our Debt Redemption plans and to make a substantial beginning of the remission of Provincial contributions. To-day we are continuing last year's work while at the same time celebrating the happy extinction of the notorious (even if sometimes maligned) Cotton Excise Duty.

No Grounds for Despondency.

I ask those who profess unending dissatisfaction with the Reforms and denounce them as a sham and the Government as insincere and unresponsive, does the financial story of these three short years justify depression or despondency? In that brief space we have immensely improved our financial machinery and have progressed nearly half-way on the road to extinction of the Provincial contributions, and we have reduced the Salt Tax and abolished the Cotton Excise Duty. For five years the Reformed Legislatures have been at work in India. It is true that weather conditions have on the whole favoured us and that the level of taxation is still high in comparison with 1914, though not in comparison with other countries. But to me it seems undeniable that the association of chosen representatives of the people of India with the Executive Government and their constant interaction the one upon the other in the Assembly and the Council of State have enabled India to win through the inevitable discomforts of the period following the war with a measure of success that makes her financial position the envy of other nations and could scarcely have been possible without the Reformed Constitution.

Too Much Politics. Too Little Economics.

The members of this House appear to me sometimes to fix their attention so earnestly on what are called political questions as to overlook the steady advance towards the goal of constitutional self-government which is being registered day by day in administration and in finance. Mr. Coates, the present Prime Minister of New Zealand, made a confession of faith in a speech delivered last May soon after he succeeded to the Premiership, which deserves, I think, the careful consideration of those who are working for India's future. "It may seem," he said, "that I have unduly stressed the financial and administrative aspect of Government. My six years of Ministerial service, however, have convinced me that intensive application of the principles of sound finance to every function of Government is ever essential in the public interest. It is from that solid foundation created that we can build the structure of our public services and enable the development of our country to proceed.....Only by judicious care and foresight in setting our financial foundations is it possible to devote the necessary attention to all our citizens."

Sound Financial Foundations Laid.

The Government of India and this Assembly have not always seen eye to eye on financial questions, but the record shows that we have worked together, not without reward, to establish a foundation of financial stability far more firmly based than when we began. We leave to the next Assembly the task of building on those foundations with the firm assurance that, though all the difficulties are not surmounted and though new anxieties may arise, they will not have to complain of our work of preparation and will find their financial heritage a source of strength in advancing to the solution of the political and constitutional tasks which await them.

The Annual Report for 1924 records the Indian population of Fiji as 65,000. Rice and cotton cultivation is almost entirely in their hands; and they continue to settle in increasing numbers in the sugar districts, where the cultivation of the sugarcane tends to become more and more an Indian occupation.

Canada and the Gold Standard.

By Donald M. Marvin, B.A., M.A., Ph.D.,
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Depreciated currencies, war debts, reparation payments and the large gold holdings of the United States have complicated the phenomena of international finance so that many old questions must be considered from a new viewpoint. Perhaps the most important contribution to the recent discussion of monetary affairs was Professor Keynes' suggestion for a managed currency which would have done away with gold as a basis of monetary values. These proposals were seriously debated by the leading economists and bankers of Great Britain. Had the plan suggested by Professor Keynes been successfully launched by England and followed by other countries, the United States would have been in the position in regard to gold that China is with respect to silver. Gold would have fallen greatly in value and payment of the war debts of the various European countries to the United States would have been greatly simplified. The decreased value of gold would have been injurious to gold-producing countries as well as to the United States. The general necessity for rehabilitating world confidence in stable exchange rates between countries with its beneficial effect on international trade and the sentimental values attached to gold presented so desirable a combination that the British Government decided to return to gold payments and thereby initiated a condition that is likely to again become world-wide. Although hypothesis and forecast in this field are on an empirical and tentative basis, yet the return to the gold standard has become so strong a world trend that it is advisable that a careful study be made of Canada's ability to return to gold payments.

The Royal Bank of Canada has been steadily advocating the resumption of gold payments by the Dominion Government for the past three years. In May 1923, the Monthly Letter of the Royal Bank of Canada said, "Our general financial situation should now be regarded as normal. The figures indicate that the position of the Government note circulation is sound and without further preparations gold payments might be immediately resumed, with the assurance that no important loss of the Government's stock of gold would take place. The matter is one which might well engage the early attention of the Government. It would add to our prestige and credit if we were the first of all countries, belligerent and otherwise, excepting only the United States, to return to the gold standard without restrictions." It can hardly be doubted that had this step been taken at that time it would have accelerated the improvement in general business conditions.

It was in recognition of this situation that Sir Herbert S. Holt, in his annual addresses before the shareholders of The Royal Bank of Canada in January 1924, 1925 and 1926, urged the return to the gold standard. In this last annual address he said:

"Last year we called attention to the ease with which it would be possible for Canada to return to the gold basis. The movement which has since developed towards the stabilization of the exchanges of most of the influential nations of the world indicates the value which they attach to definitely linking their currencies with gold. Meanwhile, the course of exchange between Canada and the United States has shown that the restoration of gold payments by this country would be a simple matter. I cannot conceive why there should be any delay in ending the present anomalous situation."

The report of Dr. G. Vissering of the Netherlands Bank and Dr. E. W. Kemmerer of Princeton University on the "Advisability of the South African Union returning to the Gold Basis", presented certain advantages which would accrue from the increased stability of their monetary unit, certain advantages to be derived from increased world confidence in South African financial stability, and finally took up the question as to the practicability of the step in relation to the country's financial and credit structure and the degree of deflation then experienced. One who wishes to read an able discussion on the advantages of the gold standard would find this report well worth consideration.

So far as the advantages to be derived from increased confidence are concerned these are of just as great importance to Canada as they were to South Africa. There is increasing competition between various parts of the British Empire for British capital, British immigrants and British interest. If the Union of South Africa took this step with a view to

securing confidence in the stability of her financial structure, Canada can ill afford to delay doing likewise. Capital is undoubtedly conservative and for years to come it will prefer countries which are definitely on a gold basis.

South Africa produces more gold than any other country in the world and on this account it was to her advantage to be among the leaders in re-establishing the gold standard. Records indicate that Canada is rapidly approaching the point where she will be the second world producer of gold. With the opening of new gold producing areas, Canada has a steadily increasing interest in the buying power of gold.

It is probably unnecessary to discuss the desirability of resumption of gold payments. On this point there has been unanimity so far as Canadian authorities have been articulate on the subject. The objections which have been voiced have been only as to the feasibility of such a move. Fears have been expressed that if free gold movements are permitted all our gold might be drained away and that we might have again to suspend gold payments. Those who have made these predictions have, without exception, failed to explain how this condition might be brought about and why we were considered to be in a more vulnerable position in this respect than before the war. I believe the fears expressed are groundless and we shall now proceed to analyse the situation in support of this opinion. Let us make a careful study of Canada's financial position with a view to determining the real practicability of this action. In making this study let us examine Canada's position in relation to each of the criteria used by the financial experts of the League of Nations in considering the foreign exchange situation of many nations. These were :- degree of inflation, currency structure, financial structure, foreign indebtedness and balance of trade.

Since 1922 Canada's wholesale price level has been proportionately lower than that of the United States as compared with pre-war prices. Canada has been deflated to gold parity. Since resumption of gold payments will produce no change in price levels there can be no objection on this ground to making the step.

Turning to the first table which you hold, you will see that it is a statement of our currency structure during the last eleven years. So far as Dominion notes are concerned, you will see that at present the total issue amounts to $212,000,000. Let us see how this amount is distributed. $46,000,000 is held in the central gold reserve. This is about the minimum in the last eight years. In the last few years amalgamations have reduced Bank capital and this has resulted in a considerable reduction in free note issue. With a return to good times there is need for an increasing volume of circulation so that we must regard this $46,000,000 as the minimum that will be held in the central gold reserve.

The banks held last year an average of $139,029,000 in Dominion notes. Section 60 of the Bank Act, reads : "The bank shall hold in Dominion notes, not less than 40% of the cash reserves which it has in Canada." These cash reserves have not been under $200,000,000 during the last ten years and it is not reasonable to suppose that the banks will ever require less than $100,000,000 in Dominion notes as reserves and for inter-bank payments.

Thirty million of Dominion notes are in denominations of five dollars or under and are in constant circulation. Twenty-eight of these thirty million are one and two dollar bills and are necessary for small change. We cannot conceive of circumstances where any proportion of these would be presented for redemption. We have, therefore, $46,000,000 for central gold reserves, $100,000,000 for bank reserves and $30,000,000 for pocket money. The total of $176,000,000 is the minimum to which Dominion Government notes could be reduced. This leaves only $35,000,000 to be redeemed even in the highly improbable event of business sinking below the lowest level in the past ten years. Actually at the present time all the Dominion notes outstanding are essential to the normal conduct of the country's business. Resumption of gold payments would lead to no important gold movement. You will notice, however, that the Government holds $118,000,000 in gold. If the above conclusions are sound, it is obvious that this is more than ample. Under previous conditions Dominion notes were issued only against deposit of gold but a new factor has been introduced since the date that we went off the gold basis, namely the Finance Act, under which the Dominion Government is empowered to issue notes to the chartered banks of Canada in the form of loans against satisfactory security. It is conceivable that by lending excessively under this act, inflation might imperil the Government gold reserves. Such hypothesis anticipates conditions of much greater strain than have been created at any time during or since the War. It presupposes an extended position on the part of the banks, which they are by no means

likely to take and one requiring immediate correction by whatever means available. While we feel that there is no real danger of such a condition being created through the operation of the Finance Act, nevertheless, since there is such a possibility it would seem necessary that the Legislation regarding the resumption of gold payments should provide against the possibility of over-issue of Government notes by stipulating that further loans under the Finance Act should not be permitted in the event that the gold reserves fall below a certain figure, say 40%. For the sake of emphasis, we repeat that the margin at present held would provide against borrowings under the Finance Act in excess of the maximum that has been borrowed under this Legislation to date. The restrictive provision would only become operative if the financial structure became extended to a degree that would be dangerous and which we have no reason from our past experience to expect.

Under the Bank Act the banks are authorized to issue notes of the denomination of $5 and multiples thereof to the amount of their paid-up capital. In addition, during the period of movement of crops the banks may issue excess circulation to the amount of 15% of their combined capital and rest are reserve fund. The banks pay interest on the excess at 5%. Additional circulation to an unlimited extent may be issued by the bank depositing dollar for dollar in gold or Dominion notes in the central gold reserve. The total circulation as indicated by the statement in your hands, is $164,000,000. Every day each bank returns to the issuing bank, notes received over the counter. Fluctuations in the volume of notes outstanding are thereby taken care of automatically with very little disturbance to the banks' reserves. Bank notes ordinarily are not legal tender, and under pre-war conditions banks found it necessary to hold very little actual gold coin. At the present time, however, they hold some $70,000,000 as part of their reserves. Since in practice the reserves must bear a certain relation to the liabilities, it is obvious that if the gold held by the banks were released by them it would have to be replaced by some other cash reserve, *i.e.*, Dominion notes. Dominion notes can only be obtained by the deposit of an equivalent amount in gold or by borrowing under the Finance Act, which we have fully dealt with above. With a tendency to improved conditions, we must expect an increase rather than a decrease in the circulation of bank notes. Therefore, we must conclude that present gold holdings of the banks themselves are larger than there is any practical necessity for them to hold. This condition has been brought about by the fact that during the fall of the past two years Canadian exchange has advanced to the point where it was profitable to import gold, the Government giving license to re-export later should the importing banks wish to do so. It is this condition which has made Canadian exchange so stable in the last two years and a substantial gold movement has taken place.

It should also not be overlooked that Canadian Banks carry a large volume of liquid assets abroad which are immediately available should Canadian business conditions make this course necessary. These are (1) Cash balances in Banks outside of Canada, (2) Call and short loans in New York (and London) and (3) readily marketable securities.

For greater clearness it will now be advisable to examine the consolidated position of total circulation, and we find that eliminating the duplication in the central gold reserve we have $315,000,000 of bank and Dominion note issue against which the Government and the banks hold actual gold amounting to 60%. Great Britain, Sweden and Germany, which have recently resumed gold payments, have only about 40% and the need for extraordinary reserve in these countries is far greater than in Canada. As a matter of fact, there is no country in the world that could, if it wished, operate safely with less holdings of gold than Canada. The reason for this is our proximity to the United States. The credit resources of that country are at our disposal. Our general commercial conditions are more or less similar to those of the United States and therefore, are well understood by United States financiers. Our principal banks and financial houses have branches or intimate connections in New York which could be called into play at a moment's notice. Credit stringency would tend to lead to borrowing in the United States, and to be more specific in the event of serious financial crisis in Canada there is no doubt that the Dominion Government could arrange a loan in New York to meet the exigencies of the situation without any delay.

Turning to the table covering our general financial structure, you will note that there are deposits in Canadian Banks amounting to 2½ billion dollars and a note circulation amounting in all to $340,000,000. Against this structure there are total gold holdings amounting to $238,000,000 or about 8%. Eight per cent is proportionately a larger reserve than that held by the Great Britain and

many other important countries. The banks are in an unusually strong position, holding liquid reserves of more than 60%, which is the highest in Canadian history. Surely there is no weakness in our general financial structure preventing our return to gold payments.

Let us for a moment consider Canada's international balance sheet. In 1925 our exports exceeded our imports by $380,719,506, as against this there is an invisible item amounting to about $300,000,000 in the form of interest charges on foreign capital and war debts. There is another invisible item of increasing importance to Canada of a favourable nature, consisting of the expenditures of tourists. The Vancouver Tourist Bureau estimated that this amounted to $60,000,000 in British Columbia alone, which seems high; but for the Dominion the amount can probably be conservatively estimated at $120,000,000 annually. Taking these and other invisible items into consideration the balance in our favour in 1925 would, we estimate, be in the vicinity of $200,000,000, although any estimate of this nature must be made and accepted with some reserve.

In connection with the question of the resumption of gold payments, the fear has often been expressed that unfavourable developments in our foreign trade either in a reduced surplus of exports, or an actual surplus of merchandise imports, might drain away our gold and produce a serious situation. It should be noted, however, that favourable or unfavourable balances of trade are not accidental, but are dictated by buying capacity.

The unfavourable balance in merchandise trade prior to the war was a result of heavy Canadian borrowing, and the funds thus secured were used for public and private developments. Not only did these give rise to a demand for such things as iron and steel products and other materials required in specific developments, but they gave employment to labour, part of whose requirements were for imported goods. If business becomes more active in the near future imports will increase, but the product of more active business would be either increased exports or the creation of some other increased assets which would enable us to pay for the increased imports.

Let us imagine for the moment that a crop failure in 1926 or 1927 will substantially reduce our exports—obviously the buying power of farmers will be equally reduced and their purchase of imported goods will be cut down. Such a misfortune would also reduce the activity of Canadian industry and thus reduce labour's purchasing power. In the initial stages of these developments, it is quite probable that there would be some gold exports but this very fact sets forces in motion which would soon right the situation. Consumption and imports would quickly be reduced and the depression period which would follow would be marked by easy credit rather than by credit strain. Our reserves are more than ample to meet the strain at the time of crop failure and the period which would follow would make no demand on our gold reserves. If those people are right who declare that unfavourable changes in balance of trade seriously threaten gold reserves, then neither Canada nor any other country should ever take the risk of maintaining the gold standard, nor should any country in the world take that risk in the future, because it would be economically foolish as well as impossible to attempt to maintain a gold reserve sufficiently large to respond to the great fluctuations in foreign trade that occur from time to time.

In any discussion of this kind there must inevitably be a tendency to over-emphasize the importance of the movement of gold on exchange. Actually in practice so far as Canada is concerned, these movements should be of small proportions except so far as the sale of the production of mines is concerned, and the export of such gold by the mines will have no greater effect on exchange than the export of any other commodity. It will be obvious to you that if the Canadian mines continue the practice they have observed lately of selling gold to the Ottawa mint, the accumulation of gold reserves will, within a short time, exceed the total note issue, if the Government does not permit gold export. Presumably the Government will not continue the present situation for any length of time, since it would mean that they would lose all financial benefits from the note circulation. The sale of Canadian mined gold to the mint is principally responsible for the recent marked increase in the Dominion Government gold reserves against circulation.

Canada is holding too much rather than too little gold. With a world-wide increase in production and with our new semi-stabilized price levels, the proportion of gold held as reserved by central banks must be in line with present practice rather than in line with pre-war practice or there will be a general increase in gold values, and a decrease in prices which will bring on another world depression. Once we have resumed gold payments and observed the trend of affairs, say for one year, it would then be advisable that new legislation should

be sought permitting the Government to withdraw a certain proportion of its gold reserves, using the amount in payment of debts abroad. Considering the present figures and the general trend as a basis, I believe the experience of one year of free gold movement will have demonstrated that fifty million dollars might be released in this manner. If it were possible to use this to reduce our borrowings, it would represent an annual interest saving to the Government of at least two million dollars.

The Legislation which might be enacted in connection with resumption of gold payments should contain no special conditions except the one previously mentioned; that the Government would have no power to make advances under the Finance Act if the gold reserves fell below 40%. As previously suggested, after a year's experience, legislation might then be enacted to provide for the amount of notes which might be uncovered by gold or securities deposited under the Finance Act. Prior to the war, the amount uncovered by specie never exceeded £22,000,000 The amount which might be held uncovered should, no doubt, be reviewed from time to time, but as a principle it might be stated that for Canada to hold gold in excess of the amount necessary to maintain our exchange at gold parity is a waste. Any surplus should be made to earn interest. The United States must lead in finance in this hemisphere and will probably continue to dominate the gold situation for years to come. To maintain this situation and keep her price levels stable it will be necessary for her to defray the cost of holding surplus supplies and there is no reason for Canada to render any assistance in this respect in view of our Government's relative poverty, as compared to the amazing prosperity of the United States. In January 1926, when speaking on this subject as applied to Great Britain at the annual meeting of the Stockholders of Midland Bank, Ltd., the Right Honorable Reginald McKenna said:

"The Exchange could be prevented from reaching gold import point by the purchase of dollars, to be utilized at the Treasury's option either in advance payment of instalments of the American debt or in the accumulation of United States Government bonds. This operation would involve little or no less of interest to the British tax-payer, and would have the added advantage of safeguarding the position of the Bank of England. Any proposal to apply surplus gold to permanent use in this country, such as additional backing to currency notes, would be an unnecessary and costly proceeding, and should, I think, be rejected, having regard to the heavy burden of existing taxation."

Summing up then, we would note that as reflected in the exchanges we are now on a practical gold basis and thus do not have to face the difficulties of adjusting internal and external price levels that were faced by Great Britain. The weight of our internal and external debt would not be changed by such resumption. Our general business situation is sound and we are constantly increasing its strength through increasing and diversifying production. Canada is an export country needing foreign markets and it is also a country needing foreign capital and immigration. Confidence is required to restore the flow of international commerce. Confidence in Canada is required if we are to increase our immigration and development. Our banks are in a stronger and more liquid position than at any time in our history. Under the present Law, Dominion notes will again become redeemable June 30th, 1926, and at that same time the requirements for licensing gold shipments abroad will be discontinued unless further Legislative action is taken. Now is the time to consider the provisions of the Finance Act and surely we can find no more concrete method of gaining world confidence and expressing our own confidence in the strength of our financial future than by resuming gold payments.

AVERAGE VOLUME OF CANADIAN GOLD RESERVES.
January through November, 1925.
(In millions of Dollars.)

Bank Vaults	61
Central Gold Reserves	10
Against Dominion Notes	118½
TOTAL GOLD HOLDINGS	189½
RATIO OF GOLD TO NOTES	60

AVERAGE VOLUME OF CANADIAN CURRENCY.
January through November, 1925.
(In millions of Dollars.)

DOMINION NOTES	212
Less Notes held in Central Gold Reserves	46
	166
BANK NOTES	164½
Less Notes of other Banks held as Assets	15
	149½
TOTAL CIRCULATION	315½

BANKING AND CURRENCY.
Credit Structure.
(In millions of Dollars.)

Currency—	1914	1917	1920	*1925
Dominion Notes ..	114	160	214	174
(*Less* Notes in Central Gold Reserve)				
Bank Notes	84	131	188	166
(*Less* notes of other Banks)				
Total Notes in Circulation	198	291	402	340
Deposits—				
Chartered Banks :				
In Canada	1,038	1,412	2,145	2,049
Outside Canada ..	137	197	365	360
Savings Banks and Trust Companies ..	94	112	97	193
Total Deposits ..	*1,269	1,721	2,607	2,602
Credit Structure ..	1,467	2,012	3,009	2,942

Gold Reserves—	1914	1917	1920	*1925
Banks				
In Vaults	46	72	80	84
In Central Gold Reserve	..	12	10	19
Government				
Against Savings Deposits	5	5	4	3
Against Dominion Notes	96	113	100	132
Total Gold Reserves ..	147	202	194	238
% Credit Structure ..	10.0	10.0	6.4	8

* (Nov 30, 1925)

Karachi Municipal Finances and Administration.

A Summary of Sir M. Visvesvaraya's Report.

[*In certain respects, the Report of Sir M. Visvesvaraya, K.C.I.E., on the finance and administration of Karachi is of wider application than what it may seem at first. We therefore make no apology for publishing a summary of his survey together with the recommendations made by him.—Ed., M.E.J.*]

The affairs of the Karachi Municipality, both financial and administrative, have been the subject of a special investigation by Sir M. Visvesvaraya, and his report bearing the above title is now printed by the Karachi Municipality and issued in booklet form to the Councillors. The report is divided into four chapters. In the first chapter, attention is drawn to the present condition of the city, its wants and deficiencies and to the various problems awaiting solution and settlement at the hands of the Municipal Corporation.

The report partakes of the nature of a city survey commonly undertaken in countries like the United States of America or Canada. The investigation was conducted for about six weeks and from the facts and data gathered an endeavour is made to give a bird's-eye view of the principal needs of the city, accompanied by suggestions and recommendations as to the best methods of supplying the same.

Twelve Appendices and a map accompany the report.

MUNICIPAL FINANCES.

Chapter II dealing with the Municipal finances invites attention to certain local budget practices and defects in book-keeping. No clear distinction is maintained, it is stated, between expenditure from loans and expenditure from current revenues in respect of new works. Several separate funds are maintained and credits and debits are made from one fund to another and from that again to a third and so on, but there is no clear balance sheet given of the year's transactions. In the maze of details, one altogether misses such essential information as the total income and expenditure of the year under revenue or capital account.

The more important public works for which there is demand are included in a programme of expenditure projected for the next six years. The development fund works, *i.e.*, works constructed from the proceeds of land sales are estimated to cost a little over Rs. 16 lakhs. These works will continue to be financed from the proceeds of land sales, as at present. Ordinarily no loan would be needed for them. The projected water-supply and drainage works are estimated to cost Rs. 70.05 lakhs. These will be financed from the water works revenue which are expected to be quite ample for the purpose. The third class of works comprise asphalt surfacing to roads, a new Municipal Hall and other works which are estimated to cost Rs. 44.50 lakhs. The yearly interest and sinking fund charges on a loan for this class of works will come to about Rs. 3½ lakhs and this will be an annual liability for about 30 years. The expenditure on public instruction will be growing at the rate of about half

a lakh per annum. If it is remembered that the revenues of the Municipality have doubled within the past six years, no difficulty need be apprehended in regard to the ability of the current revenues to meet this small additional expenditure.

Various reforms are suggested in the system of accounts, the principal being the separation of capital and revenue accounts and the preparation of an abstract of capital and revenue expenditure and an aggregate balance sheet so as to embody all the transactions in one view. To make the transactions intelligible a budget speech or statement should be, it is suggested, published explaining clearly the plans and policies of the Corporation for the coming and future years. Government should be approached in the matter of fixing the borrowing powers of the Municipality. A six-year programme of capital works and a progress report of sanctioned works should be appended to the budget and to the accounts. It is added that the account reforms suggested do not involve the abandonment of any of the existing conventions and restrictions to which the Municipality is at present committed.

The conclusion arrived at in the report regarding the true condition of the finances is then summed up. There is nothing particularly wrong with the finances. The Municipal debt is less than a year's income. The current revenues which are increasing rapidly are sufficient to meet the ordinary expenditure. Under the present policy the city has to pinch and pare at a time of great trade depression to provide funds for improvements, the benefits of which will be shared by a future population which in all probability will be living under more affluent circumstances. On the other hand it should be remembered that the Corporation have never in their past career contracted loans of the magnitude now proposed although in most Western Municipalities heavy borrowing is a normal practice. Nearer home we have the example of Bombay which has gone in for very heavy loans. The citizens and their representatives have thus to choose between a policy of caution which may mean safety but stagnation and cramping of activities, and a policy of self-trust and enterprise, the reward of which may be the rapid expansion of trade, growth of money power of the City and large additions to Municipal revenues.

Municipal Departments and Staff.

The Municipal expenditure has doubled within the past six years. Work has grown rapidly, sub-committees have multiplied and the day-to-day management has become more complex. The staff has to be adjusted to the additional work it has to do and special measures seem necessary to increase administrative vigour and efficiency. An increase of expenditure of Rs. 65,880 is proposed for this purpose. Provision is made in this expenditure for the appointment of a separate Secretary to the Corporation for facilitating the work of the large number of sub-committees that are in session.

If economies are wanted the Corporation should turn their searchlight into the working of their two largest spending departments, *viz.*, (1) the Public Works Department and (2) the Public Health Department which appropriate to themselves nearly 60 per cent of the total revenues of the city. Another large spending department is public instruction, but the cost here is still growing and is bound to grow, and there is no scope here for retrenchment.

The total retrenchment proposed in all the departments comes to Rs. 4.31 lakhs. The net effect of the retrenchment proposals is a saving of Rs. 3.65 lakhs or about 9 per cent of the total expenditure. If the Municipality carries out a detailed examination of the departments on the basis indicated in the report, there will be further invisible economies the money value of which may be estimated at Rs. 2 to 3 lakhs more.

Turning to the question of the administrative efficiency the report states that the new Act should give adequate powers to the Corporation commensurate with the increasing responsibilities of a growing and important maritime City. The term of office of President should be three years. Provision should be made for maintaining the office of the Vice-President. The Corporation should have more liberty of action in the matter of the appointment and the removal of the Chief Administrative Officer. The payment of fees to Members of the proposed Standing Committee who will have very responsible duties to perform is advocated

The Bill provides for only two Executive Committees besides the Standing Committee. The addition of two more Committees, *viz.*, a Public Works Committee and a Stores and Contracts Committee, is considered necessary. The citizens should be kept well posted by propaganda, by means of pamphlets, leaflets, etc., with the work done and progress made

on the various schemes, so that the Corporation may always have behind it the support of a well-informed and intelligent public opinion. For carrying on Municipal research and for giving continuous attention to questions connected with administrative efficiency, the appointment of a Research Bureau is recommended. One of the principal duties of the Bureau will be to prepare the pamphlets, leaflets, etc., referred to, and to explain the budget and the affairs of the Municipality to the citizens. The duties of the Research Bureau are then mentioned in some detail. The Bureau, it is added, should form a sort of central thinking office for the Municipal administration.

Future Plans and Policies.

The future of Karachi, says the report, will be what the leading citizens may make of it. It is full of promise. A change of outlook, new plans and new policies are necessary. If the present situation is boldly and judiciously handled, Karachi with its opportunities may become at no distant date a humming centre of industry, a great entrepot and a flourishing port.

A map or plan of the future city taking cognizance of all its needs, residential, industrial, commercial and aesthetic, should be prepared and maintained. It may be revised every time changes are found to be necessary, say, once in five or six years. This plan should indicate the position of the future circular and trunk roads and of the zones or districts set apart for special uses. A city plan on the lines indicated has been prepared and is attached to the report.

The appointment by Government of a Central Advisory Board is advocated for co-ordinating the work of, and ensuring harmony of plan and action among, the several agencies engaged in developing the city and port of Karachi. On such a Board the Municipality should have a strong representation.

One suggestion is that the railway administration might be induced to help in providing cheap transport by running rapid suburban trains up to the Malir station to enable the population to spread out and relieve congestion in the city.

Regarding the three public utility services, namely, tramways, electric power and lighting, and telephones, the defects in the existing utilities are pointed out and it is thought that conferences between the Municipality and the Corporations concerned might lead to the improvement of the services and reduction of rates.

The appointment of a Committee is recommended to help to bring factory industries into existence.

The public welfare activities hitherto followed by the new Corporation are then referred to and a further development of the same is advocated. A system of eating and lodging houses for the middle classes and the poor on standard lines, a properly organized public library, and public reading rooms are suggested. A museum is in the making and art galleries might follow.

Discussing the housing shortage question, it is remarked that the chief cause of congestion was not that there was not sufficient land to build on, but that adequate transport facilities required to spread the population, at rates which the poorer population can afford to pay, were lacking. The building restrictions were too many and land rents charged on expiry of leases were considered prohibitive. The essential thing is to arrange for improved transport facilities and to give out lands on liberal terms to the public. This done, the ordinary laws of supply and demand might be allowed to take their course.

The work of investigation begun by the writer should be continued and all necessary details worked out and practical action taken on the proposals for retrenchment and reform. It is suggested that two officers should be placed on special duty for three or four months, one of whom being an officer of the Municipality and the other a sound business man or a Government officer. The investigation should be pursued until every department of the Municipality is dealt within the manner suggested. Some permanent results of great value may be expected to follow from this, if the work is faithfully carried out. The cost of the additional expenditure will be inappreciable compared to the great advantages and the money value of the savings likely to accrue.

Conclusion.

All things considered, the Municipal situation in Karachi compares favourably with that of other efficiently administered cities in India. An enterprising citizen of Karachi said to the writer a few days ago: "Whenever I return from a visit to Europe, a feeling of depression comes over me. While in England and Europe they travel by miles, our advance here can be measured only by inches." The Karachi Municipality might take lessons from the more progressive and wide-awake cities

outside the country and endeavour to do things better, that is, endeavour to keep all its needs under constant investigation to ensure steady progress and improvement.

The Municipal finances bear favourable comparison with those of other Indian cities. With regard to the criticisms levelled against them, the report quotes what an American said of British finances after the War: "They say the finances are going to the dogs, although it does so, so leisurely that it does not get there." But this is not the same as saying there is no room for improvement: the Municipality has yet to modernize its financial practices and book-keeping.

The criticisms levelled at the work of the sub-committees need not occasion any disappointment. The difficulties here met with are no more than what may be expected anywhere else when a beginning is made. In every municipality there will be conflict of views, friction, dissatisfaction, inequalities and abnormalities. But amidst all these, through all the bustle and contest, emerge sound decisions and wise action which would not be otherwise obtainable except perhaps under the City Manager plan when you get a good City Manager, or occasionally under the bureaucratic system by the surrender of the democratic principle.

Economic and Rural Reconstruction in India.

By R. A. Rahim, M.A.,

Development Officer, B. and O. Co-operative Societies.

By rural India I mean the villages of India treated not as mere appendages to the towns, but as substantial entities which deserved consideration and respect from the public. On the social, economic and industrial improvements of a village, depends, in the main, the future of India's welfare. In 1921, India with an area of 18 lakhs sq. miles had a population of 31,89,42,480; out of which only 10 per cent or 3 crores and 23 lakhs lived in towns, and the rest 90 per cent were to be found in villages. India was divided into 273 districts and contained only 2316 towns but had 6,85,663 villages. 72.9 per cent of the population, *i.e.*, 23,06,52,350 people, are agriculturists: 10.4 per cent. *i.e.*, 3,31,67,018 people, are employed in industries—mostly cottage and home industries, 5.7 per cent in trade and only 48,25,479 or 1.4 per cent are in the services, police and army. Though the number of people residing in villages is overwhelmingly larger than those living in towns, yet the villages are made to merely serve the purposes of the towns and exploited in every conceivable way. India is the epitome of the world. It has got a rich variety of climates, soils, and natural facilities. Its mineral resources are vast and varied. it is self-contained in every way. It is meant by nature to be the most prosperous country of the world, but the bulwark of population—the agriculturists—are the poorest people in the world. To make them prosperous, to make them lead a happy life with some certainty of economic future, an organized effort of the whole nation and devoted work of self-sacrificing men are wanted. If they aspired for Swaraj, it must be a Raj where the agriculturists, the artizans, the labourers would have a full and respectable life.

In spite of its vast resources, India was poor in every department of life. Although agriculture is the chief occupation of the people, yet the production of rice in India is only 1/5 per acre of that of Spain; wheat $\frac{1}{3}$ that of England and $\frac{1}{4}$ that of Denmark. Its soil yields only 80 mds. per "bigha" of potato while the soil of England produced 140 mds. in the same area. The production of wheat per acre in India is on the average 12 bushels only while Canada, United Kingdom, Germany, Belgium and Denmark produced 27.7, 32, 32, 37 and 40 bushels respectively. The economic salvation of India depends mainly upon the improvement of Indian agriculture. No political developments can be stable without this basic foundation being strengthened.

The national assets per head of the Indian people is increasing very, very slowly, while in foreign countries it has risen by leaps and bounds. The following are the figures:—

Year	India	China	U. Kingdom	U.S.A.
1814	Rs. 200	300	950	65.
1914	Rs. 300	300	5.900	7,640.

In a short period of only seven years, the wealth per capita of Japan has quadrupled from 750 in 1914 to 2,860 in 1921—that is an instance to show that a country could be-

come rich, and economically sound very quickly if properly reorganized. The reasons for India's backwardness are many- want of sympathy and active co-operation of the educated men with or for the masses, loss of vitality due to impoverished conditions, want of knowledge of hygiene and sanitary principles, social customs, ignorance, etc., etc.

The longevity of the people of India is on the decrease- the average Indian life at the present time is only 24.7 years which stood at the comparatively high figure of 37.4 in 1900. In U.S.A. the span of life of average people has increased from 42 in 1900 to 45 in 1924. Consequently, the increase in population is being very much retarded. In 1872-81 the percentage of increase in one decade was 23 but came down to 1.2 L.C. in 1911-21.

Then coming to the annual income of the average man, we find it is not more than Rs. 3 per head. The actual possession per head of agriculturists and artizans is Rs. 10 only and the debt per head is Rs. 12. Majority of the people are deeply merged in debt, the total of which amounts to Rs. 50 crores, which has been lent at an exhorbitant rate of interest- -varying between Rs. 36 to Rs. 96 per cent and by different grades of financial exploiters.

The education too shows a very low figure- the number of educated people is only 7.5 per cent in the whole of India and only 4.7 in Behar and Orissa, while in other countries like Japan, England and U.S.A., the figure is between 90 and 99.2 per cent. In Behar and Orissa out of 100 persons there is only 21 in primary schools and 2 in secondary schools.

Now there is one thing vitally wrong with India. Unless that is wiped out, India might get Swaraj a hundred times, but could not be prosperous and that thing is exploitation. We find exploitation in every sphere of life. There is exploitation of soil by agriculturists without returning back what they took out from the soil. There is expoitation of villages by towns, of masses by intelligentsia, of one sex by another, of young by old, of class by class and of party by party. The most disheartening feature is that such exploitation was called "Kismat" by the illiterate people of India. They say it is their "Kismat" to rot in such a miserable condition. God did not like to make them rich and that is why they were poor, illiterate and down-trodden. But I want to see a better India in future and that could only be done by giving the masses their due.

Dr. Tagore's greatest lesson is to work for villages and to organize villages. His latest preaching and practice is that unless the villages are built up India cannot become rich or prosperous. Gokhale was for the spread of compulsory primary education but his life was nipped in the bud in the prime of his life. Sir Sayed Ahmad and Mr. C. R. Das gave up their utmost for the service of their country. The greatest man of the day is Mahatma Gandhi. He is not working for the poor but was working with the poor. But the general tendency in educated India, unfortunately, is to give vocal and lip homage to these great men or to adopt only the more histrionic or easier parts of their teachings and quietly ignore the greatest and eternal lesson each taught in his words, deeds and life. If in the place of the present more attractive and popular activities, they had real united service, the agriculturists and the artizans of India would soon be in a very different position, economically, socially, educationally and therefore politically. National progress could not be attained or retained if confined to a privileged few, with the masses disorganized and disintegrating.

The great thinkers and patriots have done their level best to uplift the masses, but conservative India is putting a stone in its own path of progress. After all India has not been as conservative as pessimists tried to make out. A picture of a mother throwing her first-born baby in the Ganges, in Ganga-Sagar Mela, so that her subsequent progeny might live, showed one evil superstition they had long buried. There were child-marriages, marriages of old men with girls of tender age, and the heartless, cruel treatment meted out to widows. All these are soon becoming past history. The biggest problem the masses have to face at present is of rising prices. The prices of foodstuffs are rising while the income of the masses is not. The typical agriculturist is half-fed, half-clad and floundering in the gravest of anxieties. The peasants are suffering from pecuniary difficulties and what they earn by their labour barely meet the demands of their creditors.

At the time of need the agriculturist went to the Sowcar and borrowed money at the most exhorbitant rate of interest of one anna per rupee per month. The interest multiplied and what the agriculturist earned or produced in the field went year after year to cover only the interest of the money borrowed. Being not in a position to repay the money, the poor

agriculturist had to part firstly with his bullocks or oxen—his right arm—then his land and lastly his home and belongings. He is now turned into a homeless vagabond, thief, pickpocket or beggar. He is then looked upon as a refuse of the society and everyone looks at him with contemptuous pity. Hundreds of those ex-propertied agriculturists and village artizans who had thus been hounded out of hearth and home can be seen on the streets of great cities, begging on the streets by exposing festering artificial wounds to get a few pice of charity. I have enquired into the lives of many such and have learnt that their only sin had been that they were poor ignorant villagers who had been tilling the soil or carrying on some cottage industry but had somehow come under the baneful exploitation of 'Sowcar', 'bania', trader, dalal, speculator or landlord's agent.

To make India happy and to relieve the masses from their penury, co-operation is essential. The establishment of Panchayets in the villages is necessary. The Co-operative Movement is helpful to agriculturists in many ways by lending them money at low rates of interest, by helping them in selection of their implements, seeds, etc., establishing schools and marketing their goods. The educated should help the masses in establishing co-operative societies and running them on a sound basis. When there would be a net-work of co-operative societies in India, then only the lot of the people would improve, then alone could the efforts of social workers of self-governing institution would be fruitful. Economic certainty of future has to precede any other form of substantial reform or progress. It is only after we can re-organize the life, industry and business of the farmer and agriculturist, that we can honestly or practically ask him to have more education, more sanitation or even great social and political reforms. The co-operative movement is endeavouring its utmost to do this and will welcome the co-operation of any other agency for the same purposes. The technical departments of the Government are also helping them as much as possible in providing selected and important seeds, manures and appliances and re-organizing the industries and business of weaving, bel-metal work, fishing, etc., etc. If non-official effort would be more readily and largely forthcoming our battles will be half-won. Once life is made fuller, happier and nobler for the agriculturists, artizans and labourers, it will at once become possible to build on this sound foundation a better, greater and more glorious new India.

Wonders of the Cheirophone.

"The nature of human speech" was the subject of a lecture given by Sir Richard Paget at St. Thomas' Hospital recently.

Sir Richard Paget showed lantern slides and introduced a number of appliances for demonstrating how speech is produced, among them the Cheirophone. This instrument, containing an organ reed, was held so that the fingers acted as a mouth. With the aid of foot bellows Sir Richard Paget produced the sentence "Hullo, London! Are you there?" and "O Lila, I love you," and, in response to a call for an encore, repeated the performances. The lecturer said that human speech, at all events in the European languages, was based on whispered speech. We could say everything so as to be perfectly understood without using the vocal chords at all. The purpose of the larynx was really to increase the range of our speech and to give it the musical qualities of inflexion and song. He explained how vowel sounds are produced by different postures of the tongue and lips, and whistled a scale upward and hummed a scale downward at the same time to show that the two operations are independent. He said that deaf mutes could readily read the lips of other people, although they never heard the sounds.

With the aid of tubes, each connected to an organ reed and blown by bellows, the lecturer obtained effects resembling those produced by the human tongue. Some of the consonants, he said, were largely distinguished by the pressure of air with which they were made.

Having given his demonstration with the Cheirophone, the lecturer said that if and when the physical conditions for producing the voice of a Melba or a Caruso were known, it should be possible to construct pipes which would give single notes of the same acoustic quality as those voices. That would not mean that they could produce a vocal Robert *a la* Melba, for the way in which the voice was used was not a question of acoustic, but of human psychology.

Educating the London Poor.

By Prof. M. K. Gidvani, M.A.

Elementary education in London was originally supplied by religious bodies The first annual Parliamentary grant to these was made in 1833. Under the Education Act of 1870, School Boards sprang up in the country and these started what came to be known as the Board Schools. These schools were maintained out of the rates while the religious schools were maintained out of voluntary contributions. The following Acts provided further for the educational needs of London. The Education Act of 1902 made the Local Education Authority responsible for all kinds of education. The Provision of Meals Act (1906) enabled local education authorities to provide meals for necessitous children. The Act of 1907 provided for medical inspection and treatment. The Children Act of 1908 dealt with neglected children and children in sordid surroundings, and the Mental Deficiency Act, 1923, dealt with mentally defective children. The most important measure in recent years is the Education Act of 1918, known as the Fisher Act. This provides for Continuation schools and education upto the age of 18.

The Educational Authority.

The London County Council, the L.C.C., is the Local Education Authority for London. Practically the whole of the Elementary education in London is under the Council's control, and in the various branches of higher education the Council is closely associated with the London University and the governing bodies of the Secondary Schools and Polytechnics. It has, besides, got its own secondary schools and Training colleges.

The Council's educational expenditure is about £7,000,000 for elementary and £1,500,000 for higher education. The Council receives 40 per cent from Government grants and will now receive 50 per cent

The age of compulsory attendance at an Elementary school is from 5 to 14, and attendance is enforced by the aid of personal visits to the homes of the children by 350 attendance officers who work in co-operation with the Head Teachers. The number of pupils in each class was originally 60 but now it has been reduced to 40.

In addition to the usual subjects, domestic economy, handicraft, nature study, physical exercises, organized games, and swimming are taught Increased attention is now being given to museums and school journeys. There is a tendency to diminish the number of examinations, and to give more freedom to teachers in framing their curricula.

Care of Children.

The L.C.C. looks after the physical and social welfare of the pupils also. There are Care Committees which are concerned with—

1. The Selection of children considered to be in need of free meals, and the care of the families.
2. The care of children in need of medical treatment.
3. The care of neglected children.
4. The care of children leaving school, and advice as to suitable employment.

The Care Committees provide free meals to children who are unable to profit by their education owing to want of food.

Medical Treatment.

The children are treated in the London hospitals, but the Council too has its treatment centres in different parts of the city. A charge of one shilling is made per child which is reduced to a penny for those who cannot pay.

For Recreation there are Evening Play centres and Happy Evenings Associations.

Central Schools.

These are special schools with a Commercial and Industrial bias. Pupils with special aptitude are selected after the age of 11 and they take a four-years course with a special curriculum. This is framed with a view to enabling pupils to pass directly into commercial and industrial positions.

Open-Air Schools and Playgroud Classes.

There are two Open-Air Schools for children of delicate constitution I visited one of these and found that the children had derived immense benefit. They were given three meals free every day and their physical condition was kept under careful observation. I found them at work in the classes and in the gardens and the Head Mistress told me that they were very happy at school.

Besides these schools, there are playground classes in ordinary schools, and these have proved extremely satisfactory

For children definitely suffering from tuberculosis, there are special schools.

The Teaching Staff.

There are about 18,000 permanent certificated teachers, of whom one-third are men. Almost all of these are trained. The salaries are: Head Teachers £200 to £550, Head Mistresses, £150 to £410, Assistant Masters, Certificated £120 to £300, Assistant Mistresses Certificated £108 to £225.

A teacher usually spends 17 years in the service before being promoted to a head teachership.

Superannuation of Teachers.

The Superannuation Act of 1918 provides the following benefits:

1. Benefits at retirement—(*a*) Lump sum of one-thirtieth of the last 5 years' average salary for each year of service upto 45 years.

(*b*) Pensions of one-eightieth of the last 5 years' average salary for each year of service upto 10 years.

Books and Apparatus.

Books and apparatus are supplied from the Central Stores. There is a scheme of circulating reading books. The Optical lantern is also used and the Council has a splendid collection of 3,500 lantern slides. I had occasion to borrow slides on India for a lesson to boys at the High School where I was teaching.

The Council also maintains an up-to-date library of books dealing with education. There are standard works on psychology, educational method, handwork, history, geography, literature and art, music, economics. All teachers in the Council's service are entitled to borrow books.

Schools for Defective Children

There are two types of these: (*a*) Those for the Physically defective and (*b*) those for Mentally defective, known as the D.P. and M.D. schools. A special Act of Parliament requires a school authority to maintain free schools for the Blind and the Deaf upto the age of 16 and the Council provides for these in its own schools and in special case sends them to missionary institutions. They are encouraged to go to Elementary school and mix with the normal children.

The Mentally Defective.

I attended the Pand M.D. schools in company with Mr. Hill, Special Inspector of these schools. Mr. Hill was very kind and he always introduced me as "the Director of Education in India". I was impressed with the care the English people took of each and every child and did not allow physical or other handicaps to stand in the way of a child's receiving education. Mr. Hill told me an interesting story of this which I cannot help repeating. A girl of the age of ten was suffering from Hysteria and other Mental disorders and the poor parents had given her up as incapable of receiving education. When approached by the Authorities they said so. The Council Officer, however, was not satisfied and a special medical officer was asked to examine the girl and submit a report. This officer thought that the girl was suffering from Hysteria but that she was not incapable of receiving education. This made it obligatory on the Council to take charge of the girl and since the parents were poor all the expenses of treatment, maintenance were borne by the Council. Mr. Hill took the girl to a Missionary Nursing Home in Wales where she could be properly looked after and also educated. This instance reminds me forcibly how the English nation cares for each little child, the lowliest and the lost.

It was announced on January 20th, 1926, that His Majesty the King-Emperor had approved the constitution of a Royal Commission on Agriculture in India. The terms of reference were published at the same time. His Majesty has now been pleased to approve that the Commission should be composed of the following:—*Chairman:* The Marquess of Linlithgow, D.L. *Members:* (1) Mr. Hubert Calvert, C.I.E., M.L.C., I.C.S., Registrar of Co-operative Societies, Punjab: (2) Professor Nagendranath Gangulee, Professor of Agriculture and Rural Economy, Calcutta University; (3) Dr. Lodhi Karim Hyder, M.L.A., Professor of Economics, Aligarh University; (4) Mr. Balakrishna Sitaram Kamat, Member of the Bombay Agricultural Board: (5) His Excellency Sir Henry Stanley Lawrence, K.C.S.I., Acting Governor of Bombay; (6) Sir James Mackenna, Kt., I.C.S., late Development Commissioner, Burma: (7) Sir Thomas Middleton, K.B.E., C.B., Commissioner under the Development and Road Improvement Funding Act; (8) Raja Sir Krishna Chandra Gajapati Narayana Deo Garu, Raja of Parlakimedi, Zamindar, Madras Presidency; (9) Rai Bahadur Sir Ganga Ram, Kt., C.I.E., M.V.O., late P.W.D.



Signor Mussolini, Italian Premier, whose life was recently unsuccessfully attempted.

Indigenous Industries.

By Christopher Hay, M.A.

The following is from the *Industrial Canada* :

There are those who would confine industrial activity in Canada to what are customarily described as "indigenous industries". That is to say, they would argue against the development of industries which must be dependent for raw materials on other countries, such, for instance, as cotton textiles, rubber goods, and so on. In order to prevent such development they would refuse protection to these industries.

If Canadians have the energy and the ability to build up great industries like the cotton and rubber industries, employing large numbers of Canadian workpeople, why should they be refused an equal measure of protection to that accorded to other industries ? To put into effect a policy of no protection for industries not indigenous to the country would mean the wrecking of the protective system and the strangling of much of the country's industrial activity.

The United States has developed great rubber manufacturing industries without a domestic rubber supply; great asbestos industries without asbestos mines and great nickel industries without nickel resources of its own. Switzerland, an inland country, and with very few raw materials, is yet an important manufacturing nation, drawing necessary supplies from outside sources. Why should Canada be denied like opportunities if its citizens have the enterprise to attempt them ?

Canadians should be given every reasonable encouragement to enter any manufacturing field, whether raw materials are obtainable in the Dominion or not, if that field can be profitably developed to the advantage of Canadian labour and capital and the well-being and advancement of the people generally.

I have quoted the above comment in full because it tellingly puts the argument against the view that countries should ordinarily restrict their manufactures to the raw products they possess in abundance. The case of England is a well-known argument against it. The Canadian case as put by the chief industrial organ of that Dominion is the only national way of viewing the whole question. It is to be hoped that this view will come to prevail hereafter

Additional Water Supply for Bangalore.

By D. Madhava Rao, B.A., B.E.

Municipal Engineer, Bangalore City Municipality.

In view of the failure of the Hessarghatta Tank, owing to the failure of the monsoon during the successive years, the supply of unfiltered water from wells in Bangalore has been resorted to. The measures so far taken are set down here briefly for the information of the public and those interested in the matter. An actual inspection and survey of all the existing private and Municipal wells has been made and detailed plans of several divisions have been prepared with the position of all the wells marked on them. There are, on the whole, 2,637 private wells in houses which are being used. They are capable of giving an average total daily supply of 1,250,000 gallons of water, calculated at the lowest figure of 500 gallons per well. At present only about 300,000 gallons are being drawn from them daily. Most of these wells are used only partly where intermittent supply of filtered water is given. No water is used in several houses where filtered water is easily available. The proper distribution and supply of water from these private wells is a separate problem by itself.

There are 62 Municipal wells in the whole City which have been opened up and made available for use, to most of which hand-pumps, elevators and electric pumps have been fitted up. From these Municipal wells, at least 171,000 gallons of water are being drawn daily.

Besides wells, three large schemes have been adopted in places where water difficulty has been most keenly felt. In Gowdanpet, which is most densely populated by Mill and Railway hands, neither well nor filtered water is available. Here, a masonry Reservoir of 6,000 gallons' capacity has been built, which is supplied with water from a Municipal well fitted up with an electric Motor and Pump. The pipe line through which water is pumped from the well to the Reservoir is 1,507 feet in length. Six street stand-posts have been given along the pipe line and ten taps have been provided for at the Reservoir. A large Municipal well has been opened up and kept in reserve to supply this Reservoir, if ever the present source fails.

In Chamrajpet there has been a great scarcity for water, especially in the more elevated parts. Over a thousand people living in these parts are being put to great inconvenience. Here, a Reservoir of 6,000 gallons'

capacity has been provided. It is to be connected by means of pipe lines with a new well that is now being sunk in the V Main Road. An electric Motor and Pump are being provided for this well. Twelve stand-posts at the junction of streets and twelve taps to the Reservoir are also to be provided to make the supply from this well absolutely self-contained.

In Cubbonpet, where also the cry for water has been persistent, a masonry Reservoir of 10,000 gallons' capacity has been put up and is being connected by a 2,900 feet pipe line leading to the Municipal well behind the Sampigey Tank, for which a Motor and Pump have been fitted up. The Reservoir is provided with 12 taps and the streets with 12 stand-posts. In case the water from this well is found inadequate for this Reservoir, another large Municipal well with an ample supply of water has been kept in reserve. The supply to Cubbonpet will thus be assured.

Arrangements have been made, through the aid of the Industries Department, to utilize the Boring Plant for deepening existing wells and for putting up Tube-wells, wherever possible. This Plant is getting to be popular in the Basavangudi area, and enquiries for its extended use are being received daily from Chamarajpet and other Extensions, where at present wells are few and far between. The question of adopting this Plant for more rapid use in meeting the increased demand for Tube-wells is under consideration.

It will thus be seen that there are 2,637 private wells in the whole City, from which only about 300,000 gallons of water are being drawn daily. From the three Reservoirs mentioned, about 20,000 gallons of water are being daily used. From the 62 Municipal wells, 171,000 gallons are drawn daily. The amount spent up-to-date is Rs. 30,000 and Rs. 10,000 more will be utilized for further developments in this direction. This will relieve the pressure on the supply of filtered water.

The above supply can be further supplemented by an additional quantity of 200,000 gallons per diem at an extra cost of Rs. 40,000. The schemes of pumping water from Kempambudi Tank and Bathing Ghat for Basavangudi, Chamarajpet and Sankarpuram, and Malleswaram respectively will give us a supply of 400,000 gallons per diem at an additional outlay of Rs. 40,000. In case the above schemes are fully given effect to, the whole City with its Extensions can be supplied with water as a substitute for filtered water from the Hessarghatta or Yelemallappa Setty Tanks. The average quantity per head per diem that can be made available, from well supplies, will be about 8 gallons. It is, however, hoped that this contingency of having to incur an expenditure of about Rs. 80,000 may not arise.

British Industries Fair.

A Visit to White City.

London.—The first impression made on those who have had an opportunity of visiting the White City and Castle Bromwich, the London and Birmingham centres respectively of the British Industries Fair, is that in the absence of competition from Wembley a successful attempt has been made to secure a more representative display of the productions of British manufacturers than on any previous occasion. The decision of the Department of Overseas Trade, under whose auspices the Fair is held, to revive the London section which was not held last year owing to the continuance of the British Empire Exhibition, met with a ready response from manufacturers and the number of exhibitors and the space occupied by the stands are larger than at earlier Fairs. Visitors to the White City found, in addition to all the old sections into which the London exhibits are divided, some new features, including a display by the clothing and allied trades and of wireless apparatus.

At Castle Bromwich, where some of the exhibits usually shown in London were housed last year, the Birmingham Chamber of Commerce, whose officials once more undertook the work of organization, has been left free to develop along the old lines with the result that the present Fair constitutes a record for the provinces. The permanent buildings, which include two of the largest exhibition halls in the provinces, proved, indeed, too small to meet the demand for space, and a new building containing 9,000 sq. ft. of floor area has been provided to meet the requirements of the 500 exhibitors who are participating in the Fair. Here, as at the White City, the exhibits cover a wider field and

include a display of working machinery in what may be regarded as a new electrical section.

Concurrently with the organization of the Fair on a more ambitious scale special efforts were made by the Department of Overseas Trade to attract home and oversea buyers. A sum of £20,000 was allocated for publicity work, and special invitations were issued to 50,000 oversea and 100,000 home buyers. In addition, steps were taken to announce the holding of the Fair to buyers generally in all parts of the world. The number of buyers abroad who took the trouble to respond to the invitation and announced their intention to visit England was much larger than in previous years, and this preliminary indication of a large attendance of buyers has been borne out by the number who have visited the London and Birmingham centres during the present week and the character and value of the business which has been transacted.

Pottery, Plate and Cutlery.

Consistent support has been given to the London Fair by the pottery and glass manufacturers and by those engaged in silver, electro-plate, cutlery, and jewelry trades. The pottery section is well representative of this important industry, and favourable comment has been made by buyers on the attempt which is being made by British manufacturers to cater for the diversified requirements of the world's market.

In the silver and electro-plate section nearly 70 per cent of the firms occupying stands are old supporters of the Fair. A new product is the ware having a porcelain lining with a silver or electro-plate covering, a combination which makes an unbreakable article while retaining all the advantages of porcelain as a food container. The cutlery exhibits reflect the dominance of Sheffield manufacturers in that field. A fine variety of watches and clocks is shown and the designs illustrate the methods which have been adopted without any sacrifice of quality or workmanship to challenge foreign competition in this field. Among the examples of jewelry work attention has been attracted by the fine range of platinum gem settings.

Chemicals.

Chemical manufacturers are responsible for a notable display to which upwards of 60 firms have made contributions. The stands of members of the Association of the British Chemical Manufacturers contain examples of fine pharmaceutical, photographic, and other chemicals, tar and ammonia products, dye intermediates, and certain heavy goods. It is a significant proof of the advance made in this industry that over 1,000 fine chemicals which were not made in Great Britain in pre-war years are now being produced. These include new medicinal products which are of great interest. The exhibits, as a whole, have given proof to buyers that the British industry while retaining its supremacy in the old fields has attacked other branches of the chemical trade with a definite measure of success.

Sports and Toys and Games.

Sports goods occupy a much larger area than for some years past, the stands covering four times the space allotted to this section at the 1921 Fair. This development reflects the increasing attention which is being given to sports and games in all countries, largely as a result of the pioneer work of Great Britain, and it is some consolation that if the supremacy of the British in the actual playing of games has been successfully challenged by other countries the trade in supplying the equipment should be retained by home firms.

Allied to the sports section is that devoted to toys and games, and while some progress appears to have been made in meeting the aggressive competition of foreign manufacturers and a number of novelties are on view, the position cannot be regarded with entire satisfaction. It must be admitted that the hopes which inspired manufacturers of toys and games to make a special effort in the immediate post-war period have not been realized.

The leather and leather goods and fancy goods sections are full of interest. In the first-named branch, in which home firms enjoy an international reputation, a successful attempt appears to have been made to reduce manufacturing costs by the adoption of mass production methods for the cheaper goods. The high quality work in this group is the best of the kind in the world. The display includes some new designs of fancy leather, and it is clear that special attention has been given to the production of attractive shades of colour. For bookbinding leather the home manufacturer has always held a high place, and the examples exhibited of this kind of work show that this position is being maintained. On other stands will be found excellent specimens of the materials used in the upholstering trade.

There is a bewildering variety of fancy goods, including advertising novelties, art metal goods, mirrors and screens, toilet combs, umbrellas and walking sticks, embroidered

fabric and paper covered articles, artificial flowers, and heraldic and fancy pottery. Special mention should be made of the articles shown which have been produced from casein material, a branch of trade which was formerly a German monopoly, but on which British manufacturers have now obtained a firm hold.

Musical instruments make an excellent show and a much larger space than in earlier years has had to be provided. The scientific and optical instruments make an effective display, and some of the special machinery used in optical work is also shown.

New Textile Section.

An entirely new section is that of the clothing and allied trades No attempt has been made to cover the textile industires for which special sectional trade exhibitions are held, but some manufacturers of clothing, hosiery, linen corsets, and gloves have taken advantage of the Fair to show to buyers an interesting range of British goods, and it is hoped that what has been done this year may be the beginning of a more important textile and clothing section. The furniture and basket ware exhibits are comparatively few in number, but include some good quality productions.

Stationery and printing are well represented. The foodstuffs exhibits are large and fully representative, and are notable for the very wide ranges of food products specially packed for the export trade.

The wireless section reflects the growth of this branch of the electrical industry. Most of the British manufacturers of radio-apparatus have taken stands, and the exhibits include transmitting and receiving apparatus for both commercial and broadcasting services. Some of the reception sets have been designed for operation off the main electric supply, thus eliminating the use of batteries.

Exhibits at Birmingham.

The Birmingham section contains examples of British productions in a number of important industries, including brass founding, hardware and ironmongery, power, lighting, heating, cooking, and ventilating, general engineering, mining equipment, motor-cars, cycles, and accessories by manufacturers who are not members of the Society of Motor Manufacturers and Traders, agricultural machinery, guns, saddlery, harness, fishing tackle, and brewery, distilling and catering plant and fittings.

Brassfounding and hardware constitute, as in past years, one of the chief departments of the Fair. The display of hardware is notable, and there is an extraordinary diversity of products.

Although mass production methods, making for standardization and cheapness, are pursued in many brassworks, there is still, as the stands show, a good demand for superior products fashioned on exclusive patterns of an individual character. In castings the keenest regard has been shown for buyers' specifications.

Cheap stamped goods are displayed in great variety, and it will be found that in this field particularly British prices are meeting the closely cut quotations of Continental competitors. The safe and lock trades are making an excellent display, and there are typical examples of the wire-working industry. On other stands will be found a great variety of ranges, fireplaces, combination grates, ovens and heaters, and radiators and coppers.

Engineering is more adequately represented on the present occasion than at the 1925 Fair, a result due in part to the inclusion among the exhibitors of many firms who preferred last year and in 1924 to make their display at the British Empire Exhibition. The exhibit of the Association of Drop Forgers and Stampers reveals the importance of the drop-forging process in the production of the interchangeable parts which are required in various branches of manufacture. The forgings in iron, carbon and alloy steels, and non-ferrous metals are of every conceivable shape and size, and are used to an enormous extent in the construction of aircraft and automobiles, in railway and agricultural engineering, and for general purposes. This group of exhibits, as well as others at the Birmingham Fair, shows in unmistakable fashion the progress which has been made during recent years in the application of science to industry. Tube-making, machine-tool manufactures, woodwork, and testing machines and weighing apparatus are well represented.

A praiseworthy innovation is the number of working exhibits in the new electrical section, many of the leading firms having co-operated to give a representative display. The demonstration of plant for the generation of electricity in small units is of special interest, having regard to the impending Government scheme for the generation of electrical energy in super-stations on a national scale.

No single organization has a right to appropriate to itself exclusively the name of "the Church".—*The Rev. W. A. Grist.*

Economics in the West.

Joint Stock Financing, 1919-1925.

London, 31st March, 1926.—Although the condition of the trade from time to time cannot be determined with the accuracy of a thermometer or a footrule, yet many indications of changes over a period are available in easily accessible economic phenomena. Some of these are well known and comparatively well understood, but among those which can hardly be so described are statistics of the amount of money directed into industry year by year. Apart from the intrusion of purely financial elements like monetary inflation, the aggregate sums may be regarded as an index to the volume of the people's savings and therefore indirectly to their general prosperity or adversity. But in addition, the type of industries favoured, and still more the type of securities issued, form a useful guide to the trend of events in different industries and in trade as a whole and to the views generally held as to the future.

The sums raised for industrial purposes in the United Kingdom during the past seven years are shown in the table below, with divisions according to groups of industries. It should be explained that these statistics are based in all cases upon prices of issue; they take no account of issues of bonus or vendors' shares, or of issues for redemption of outstanding long-term securities previously held in this country or of short-dated securities such as bills. Issues by private companies are included only when particulars are publicly announced.

New Money Raised by Companies of various classes, by years, 1919–25. (000 omitted.)

	1919	1920	1921	1922	1923	1924	1925
	£	£	£	£	£	£	£
Banks and Discount and Insurance ..	26,855	19,651	5,035	1,893	1,408	5,107	4,38
Breweries and Distilleries	2,663	3,043	4,461	1,695	5,187	2,141	1,434
Miscellaneous Commercial and Industrial	90,039	180,262	37,596	25,869	37,321	35,831	59,362
Electric Light and Power	3,604	1,982	7,018	3,240	9,924	4,680	7,243
Financial, Land, Investment and Trust ..	12,521	13,080	2,676	9,598	7,237	17,229	21,592
Iron, Coal, Steel and Engineering* ..	39,165	40,252	5,735	14,423	9,803	18,687	4,535
Mines	9,588	5,788	960	1,822	4,426	3,351	6,504
Nitrate	172	100	..	1,682	857	1,170	1,139
Oil	16,647	16,683	16,599	17,030	4,128	2,380	1,323
Shipping and Canals and Docks ..	8,668	15,636	6,652	16,893	4,550	3,236	7,3372
Tea, Coffee and Rubber	3,134	6,642	1,306	473	3,474	1,767	14,952
Telegraph and Telephone	5,455	3,040	540	2,339	891	540	2,136
Tramways and Omnibuses	1,449	1,549	1,523	1,655	961	3,928	410
	219,973	307,708	90,101	98,612	90,467	100,047	132,313

* Including motors and aviation.

The large increase in the total as between 1924 and 1925 is deceptive, resulting from the restriction imposed upon the freedom of the market for new capital. The unofficial embargo on overseas, particularly foreign, issues materially affected the direction of investment and diverted a greater amount to industrial purposes, especially on behalf of domestic enterprises. In 1925 governments, exclusive of the British Government, municipalities, public boards, railways and gas and water companies borrowed £36 millions less in this country than in the year before, the total of new capital issues of all kinds being £220 millions as compared with £223½ millions in 1924. On the whole, therefore, the increase in issues for industrial purposes cannot be regarded as a sign of a marked expansion in prosperity during last year, though it may be looked upon as evidence of welcome, modernization and development of the nation's productive and trading equipment.

The securities issued in exchange for the money put up by subscribers fall conveniently into two classes. They may represent debt, by which is meant debentures, notes and similar devices for obtaining money without widening the circle of proprietorship; or capital, comprising shares of all kinds and some stocks, which carry with them participation in the ownership and, as a rule, the management of the business. From the point of view of evidence as to trade conditions, the important distinction is that whereas debt carries with it the right to a fixed rate of interest, capital carries no right to dividend, though particular kinds of capital may carry a preference in the sharing out of such earnings as may be distributed. Consequently, neglecting the difference between the prospects of

individual concerns, the holder of debt enjoys greater security; the holder of capital the chance of bigger returns. One believes in a sound heart and a quiet life; the other rejoices in a round of excitement, with the future in the lap of the goods. Changing circumstances, however, affect views taken as to the future, and a brilliant outlook will lead many to risk in shares savings which would otherwise be carefully invested in debts. The distribution of new money as between debt and capital is, therefore, principally a matter of balancing of risks, the choice being largely determined by the general outlook and business atmosphere.

The following table shows the proportions of debt and capital to new money raised by companies in each of the last seven years:—

Types of Securities issued by Companies, by years, 1919-25.

(000 omitted.)

	—Debt—		—Capital—		Total
	£	% of Total	£	% of Total	£
1919 ..	21,021	9.6	198,952	90.4	219,973
1920 ..	46,682	15.2	261,026	84.8	307,708
1921 ..	42,202	46.8	47,899	53.2	90,101
1922 ..	48,804	49.5	49,808	50.5	98,612
1923 ..	44,650	49.4	45,817	50.6	90,467
1924 ..	38,076	38.1	61,971	61.9	100,047
1925 ..	45,189	34.2	87,125	65.8	132,314

It will be seen that the maximum proportion of debt was raised in 1922-23, and that the figures fell off materially in the succeeding two years. From the figures for the last two years it might be inferred that 1925 showed a substantial improvement over 1924, but here again, the movement is deceptive. The rubber boom attracted large amounts of money, almost entirely in the form of ordinary capital, into the purchase and development of estates, and if the tea, coffee and rubber group of companies were eliminated from the statistics the proportion of debt to new money would be 37.7 as compared with 38.6 in 1924. In the light of this fact it would be unsound to deduce that business prospects in 1925 had appeared much more promising, or that conditions had been markedly better, than in 1924.

Miscellaneous commercial and industrial companies, which include an almost infinite variety of undertakings—artificial silk, German potash, newspapers, cotton growing, hotels, for example—showed a rise in the proportion of debt. In iron, coal, steel and engineering, a collection of basic, primary industries, where any movements that take place are liable to be particularly marked, the increase was greater. In shipping, which is vitally affected by conditions in overseas trade, the rise was greater still. The record for 1925, in this as in other departments which furnish indices as to the sub-surface course of events, was, therefore, by no means a good one.

As regards long-term changes in methods of financing, the year had little effect, so far as can at present be traced. The table shows the various groups of industries, arranged, with one exception, according to the comparative preponderance of debt or capital in the new money raised over the whole period 1919-1925. In all these groups together 27.6 per cent of the new money raised during the seven years was in the form of debt and 72.4 per cent in the form of capital.

Types of Securities issued by Companies of Various Classes, aggregate figures, 1919-25.

(000 omitted)

	—Debt—		—Capital—		Total
	£	% of Total	£	% of Total	£
Tramways and Omnibuses	7,504	65.4	3,970	34.6	11,474
Shipping and Canals and Docks ..	33,124	52.6	29,848	47.4	62,972
Electric Light and Power	18,701	49.6	18,988	50.4	37,689
Iron, Coal, Steel and Engineering ..	48,830	45.7	58,022	54.3	106,852
Breweries and Distilleries	6,425	31.2	14,196	68.8	20,621
Financial, Land, Investment and Trust	21,905	26.1	62,043	73.9	83,948
Mines	5,631	17.4	26,813	82.6	32,444
Motors and Aviation	4,283	16.6	21,463	83.4	25,746
Telegraph and Telephone	2,340	15.7	12,602	84.3	14,942
Tea, Coffee and Rubber	3,223	10.2	28,525	89.8	31,748
Oil	6,113	8.1	68,977	91.9	75,090
Banks and Discount and Insurance ..	188	0.3	64,108	99.7	64,296
Miscellaneous, Commercial and Industrial	128,355	27.2	343,040	72.8	471,395

Government and Agriculture.

Recently two more publications have been added to the library of official documents dealing with various aspects of the problem of agriculture. The first was a white paper on agricultural policy, in which the Govern-

ment announced various schemes for aiding farming on the more technical side and pronounced against both subsidies and protection. The second was a lengthy report on agricultural credit, which reviewed in detail the mechanism of financing as it at present exists both here and in America, and made concrete proposals for improving the machinery in use in this country. The inadequacy of credit facilities for day-to-day processes as well as for long-term purposes has been investigated before and described in the report of the Committee on Agricultural Credit, which was summarized and commented upon in the "Review" three years ago. Legislation was then passed to give effect to the Committee's recommendations, but the facilities rendered available have been utilized scarcely at all. The proposals now made are, therefore, of considerable interest.

The two essentials in credit for agriculture as in other industries is that the borrower should know, first, what his credit costs; second, what it earns. The latter is a matter for the farmer himself, and can be achieved only by an adequate costing system. The first is dependent largely on the available methods of financing. Under present conditions the farmer is to a great extent ignorant of the cost of his short-term credit inasmuch as he borrows largely from tradesmen, merchants, auctioneers and other middlemen and suppliers of the farmers' requisites, who include the charges for accommodation in the prices of goods supplied. An additional disadvantage is that in many cases the farmer is restricted in his operations by obligations both to meet his requirements and dispose of his products through his creditor.

The report, therefore, advocates the encouragement of borrowing on a larger scale from banks instead of tradespeople, and to this end two main proposals are put forward. First, it is suggested that legislation should be passed making it possible to give to a bank a valid charge, in the form of a chattel mortgage, on particular "temporary" farming assets, the character of which to be defined by law, this charge to rank before all others except those in respect of rent, rates and taxes. It is claimed that this instrument would be vastly superior to the bill of sale, which is generally regarded as an odious document, chiefly resorted to by prospective bankrupts. It would involve no publicity beyond being recorded on a register, which would be open to inspection solely by banks. As an alternative method, it is suggested that the banks should be empowered to take a floating charge, with qualities similar to those of the chattel mortgage, on the whole of the borrower's liquid assets.

The second proposal is that the scheme for co-operative credit set up under Section 2 of the Agricultural Credit Act of 1923 should be allowed to lapse. Agricultural co-operative societies should then be registered under the Industrial and Provident Societies Act, with the function of endorsing members' promissory notes or bills of exchange. A member would be entitled by arrangement to obtain supplementary credit from his bank up to a certain limit with the aid of paper endorsed by his society. In respect of bills or notes met neither by the debtor nor out of accumulated reserves of the society, members would be liable to the extent of the nominal value of their shares, which would normally be considerably higher than the amount paid up. The Government might perhaps give some assistance by taking shares in such associations.

By these means it is thought to encourage the farmer to pay cash for goods bought, borrowing when necessary from his bank, and thus to acquire greater knowledge of the cost of accommodation and greater freedom in the marketing of his products. In the words of the report, the scheme aims at "permitting the economic condition of farming freely to determine the amount of credit it can employ".

As regards long-term and intermediate credit, the suggestion is made that a new institution, a Central Land Bank, should be founded to make mortgage loans to farmers, raising the funds for this purpose by the issue of debentures to the public. Its powers and constitution would be prescribed by law, and it would deal with the farmers through the agency of the joint stock banks. Both in respect of long-term and of short-term credit, therefore, the report contemplates concentrating the business of accommodating the farmer to a greater degree than at present in the hands of existing banks. The basis for this underlying proposal may be expressed in the statement that "the banks in this country are so firmly established and their branches so widely distributed that no other system of lending institutions could hope to rival their vast resources and experience".

The two main innovations are thus the chattel mortgage and the land bank. The attitude of the Government to the proposals has not yet been clearly defined. General approval has however been given. The Minister

of Agriculture announced, in answer to a question, that the Government intended to introduce legislation to improve existing credit facilities for agriculture, that the proposals would follow the lines of the report, and that it was hoped to introduce the necessary bill without any great delay. It is to be hoped that the machinery when set up will meet with more general acceptance and greater practical success than that made available by the Act of 1923.

Cannadian Trade and Finance.

Canadian Business during 1926.

Montreal, March 11, 1926.—The generally favourable annual reports issued by the Canadian Corporations, combined with the excellent position of all Statistical indices and a general increase in the volume of forward buying indicate a more encouraging outlook for Canadian business in 1926 than at any time in the past five years. The annual statements recently published by the leading industries and public utilities. with few exceptions, show an improvement in earnings over 1921.

The volume of construction contracts awarded in January signify that business men are taking advantage of the saving in cost of material and labour which may be realized during the winter months. Building awards for the month amounted to $12,669,000 the highest on record since 1913 with the exception of 1920 when the price level was abnormally high. Business and industrial building are on an appreciable higher level throughout the country, the former showing increases of 272% and 240% over January 1925 and 1924 respectively. A still greater development is registered in industrial building amounting to 760% over 1925 and 1900% over 1924. As a result of this activity the employment index for the building trade stood at the highest point yet recorded for the month. This trend in favour of winter building is also reflected in the December figures. Increased construction in business and industrial lines not only manifests a revival of confidence, but construction work provides an important stimulus to general trade activity.

Reports of a larger volume of forward buying throughout the country are substantiated by the manufacturing employment index which is much higher than for the same date since 1921. Textile plants, with the exception of garments and personal furnishings, are working at increased capacity, and the iron, steel and non-ferrous metals products industries are well employed. An increase in the car loadings of merchandise L.C.L. and miscellaneous freight indicate that the general distribution of goods continues on a broad scale.

Further confidence in the general business situation is reflected in the security market, the index of which has established a new high record. Commercial failures continue to decline both in number and volume of liabilities. The seasonal curtailment in general employment was the smallest yet registered for January, the index standing at 89.6 the highest for the month since the record was begun in 1920. Newsprint and pig iron production both show appreciable increases over the corresponding month of last year, the shipments of the former being 14,000 tons larger than last year and double those of 1921.

DIVERSIFICATION IN CANADIAN AGRICULTURE.

The comparative fickleness of wheat makes a half billion bushel crop seem so spectacular that there is some tendency to forget the value and importance of other farm products. The farm revenue derived from other sources is not only underestimated, but the fact is forgotten that in years when the return received from wheat is low, the revenue from other crops does much to maintain the farmers' buying power. Besides other important grain crops the potato, poultry, fruit, and dairy products of Canadian farms yield a most substantial revenue. The value of dairy products alone for 1925 is estimated at $300,000,000 a sum which lends itself to very favourable comparison with the total received from wheat. This total represents a most rapid development since 1921 ; in Manitoba, for instance, the first butter exported was sent out in 1915. Although exports constitute a rather unsatisfactory basis for estimating the development of secondary farm production, yet the following table showing the increasing value of some half dozen agricultural exports during the past few years, gives some indication of the progress toward diversification and varied opportunities in Canadian agriculture. Some suggestion of the unreliability of exports as indications of total value of production may be secured from the fact that out of

175 million lbs. of cheese produced, 150 million lbs. were exported, while out of 180 million lbs. of butter produced, only 26 million were exported.

EXPORTS OF SOME CANADIAN PRODUCTS.

(000 omitted.)

	1923	1924	1925
	$	$	$
Meats ..	23,568	25,575	37,715
Wool ..	1,991	2,479	2,501
Potatoes ..	2,620	2,503	6,262
Fruits ..	8,378	8,335	8,137
Butter ..	4,906	8,000	9,918
Cheese ..	23,445	22,376	34,576

In producing and exporting these kinds of products Canadians receive a much larger proportion of the ultimate consumption price than they do when exporting grain, lumber or pulp, they are more nearly finished products.

Frequently not only is it possible to secure a revenue more dependable than that from grain, but these other products make no such highly seasonal demands on labour supply. The farmer is seeking for products which will have a more steady flow and which will leave him less dependent upon vicissitudes of weather and market in much the same way as the manufacturer of seasonal merchandise is seeking to stabilize his production by manufacturing standard or secondary articles in off-season periods.

Aside from the increase in volume of production, and in the value of these varied farm products, that has come as a result of general rise in agricultural prices, it is of interest to note that the Canadian farmer is becoming increasingly interested in quality production. The markets of the United Kingdom are showing greater confidence in Canadian goods and there is a decreasing number of complaints in regard to shipments. General co-operation has been required and secured in order that the grades of farm products exported might be better standardized. In the grades of butter and cheese the greatest improvement has been shown by the farmers of Western Ontario. Grain, wool, meats, eggs, butter, cheese and many other products, particularly fruits, are bringing in much better returns as a result of more careful grading. Of course, inferior goods are penalized in the process but the careful work of the better farmers received a much more adequate reward under a system which yields a satisfactory price for high-grade goods.

The following tables are of interest in that they show the comparative rate of development of butter production in the various provinces. The volume of production in Quebec and Ontario is so large that it tends to conceal the very rapid development going on in the West.

PRODUCTION OF CREAMERY BUTTER IN CANADA.

1900-25 (inclusive.)

	Prince Edward Island	Nova Scotia	New Brunswick
1900 ..	562,200	334,211	287,814
1910 ..	670,908	354,785	849,633
1915 ..	539,316	1,240,483	776,416
1920 ..	1,166,032	2,503,188	1,053,649
1922 ..	1,262,006	3,329,426	1,224,930
1924 ..	1,358,381	4,139,469	1,155,108
	Manitoba	Saskatchewan	Alberta
1900 ..	1,577,010	..	745,134
1910 ..	2,050,487	1,548,696	2,149,121
1915 ..	5,839,667	3,881,014	7,544,148
1920 ..	7,578,549	6,638,656	11,821,291
1922 ..	10,559,601	8,901,144	15,417,070
1924 ..	12,632,814	13,493,670	22,288,888
	Quebec	Ontario	Brit. Colum.
1900 ..	24,625,000	7,599,542	395,808
1910 ..	41,782,678	13,876,888	1,206,202
1915 ..	36,621,491	26,414,120	1,204,598
1920 ..	41,632,511	37,234,998	2,062,844
1922 ..	57,258,470	51,633,070	2,916,183
1924 ..	65,596,627	59,954,581	3,671,370

Dairy products are now exported to the United States, South Africa, the Far East and all the countries in Europe. With such widespread sales of Canadian Dairy products it is most important that their high quality be generally recognized. The improvement in storage, refrigeration and transportation facilities has done much to aid this process of adapting production to market requirements.

APPLES.

In the Imperial Apple Shows in England during the years 1922 to 1925 Canadian Apples won 64 first places, 73 seconds, 24 thirds and 22 special prizes. In 1925 the British Columbia Jonathan was judged to be the best dessert apple in the British Empire and the premier cooking apple was the Ontario Rhode Island Greening. In 1923 and 1924 the Canadian grown McIntosh was judged to be the best dessert apple in the Empire.

At the present time about 200,000 acres are devoted to apple orchards and there are about 12 million apple trees with an annual production worth nearly ten million dollars. While there are close to 200 varieties of apples grown in the country yet here is a case where simplification and standardization would be of very direct benefit to the farmer. It has been estimated that 20–25 varieties would meet all the requirements of both marketing and soil condition. If these varieties were carefully

selected and the product standardized the return received from the same labour would be much increased. Canadian apples are already exported to the United Kingdom, the United States, Bermuda, British South Africa, China, Denmark, Irish Free State, New Zealand, Norway, Sweden and other countries. If the world as a whole is to be taught to appreciate our apples we must so standardize the product that the demand will center on certain well-known varieties.

Mr. G. E. McIntosh, the Dominion Fruit Commissioner, states that five of the provinces are already producing apples on a commercial scale and that it will be feasible for Manitoba, Saskatchewan and Alberta to produce certain varieties in sufficient quantity for their own use. Last year 12 million dollars was spent on imported fruits. With the recognition of the value of variety in diet and of the necessity for vitamines in food, fruit is becoming an increasingly important article of diet. Our present home apple consumption is so low that it would be necessary to double our present crop and to consume the whole of it at home if all of Canada were to achieve the "apple a day" habit. One step in the direction of increasing the popularity of home-grown fruit was the national advertising campaign for consumption of home-grown fruits initiated by the Canadian Horticultural Society and the campaign for the benefit of Canadian apples initiated by the Okanagan Valley apple growers' association that culminated in apple week. Apple week was a success and future fruit weeks should aid in disseminating the advantages of eating our own delicious fruits. One rather practical suggestion in the direction of popularizing apples in Canada was to the effect that standard grades of apples sold in standardized packages of about half peck capacity would meet the general demand for a small quantity unit.

Fruit and dairy products will be in constantly greater demand as world prosperity and world buying power improves. Labour's demand for increased variety of diet will express itself in a demand for more of these products as wages in Europe get back to their pre-war buying power. It is more important that the farmer as well as the manufacturer should realize that increased world stability will be reflected in a demand for increased variety of products rather than in a direct increase in the total volume of consumption.

The development of our apple exports is an example of the marked tendency for Canadian farmers to diversify their farming. An added advantage which comes from diversification is that it helps to make the farm more nearly self-sustaining than when it is a one crop farm.

English Bank Speeches.

The outstanding feature in the annual speeches of the Chairman of the leading English Banks was a discussion of Great Britain's return to the gold standard. The consensus of opinion seemed to be that while there had been some temporary difficulties in the process yet the results are already justifying the step.

In the discussion of the year's developments Mr. F. C. Goodenough, Chairman of Barclay's Bank, Ltd., emphasized the return to the gold standard, the problems arising out of the United States gold surplus and the world's need for capital.

"One of the great problems at the present time is that of obtaining an adequate supply of fresh capital not only for the British Empire and its development, but also for many other countries, which having lost a substantial amount of their capital through the war, now find great difficulty in returning to prosperity, in meeting their liabilities, and in setting their industries again at work.

"The very great industrial and speculative activity in the United States of America has had the effect of a smaller amount of her resources being available for investment abroad, and in the last few months she has transferred balances from London. For the time being, therefore whilst American resources are more fully employed at home, and with the removal by the British Government of the restriction on the granting of external loans on the London market, those who seek fresh capital are again looking to London as a centre. I have pointed out on a previous occasion how the relative advantages of London and New York as centres for the supply of capital would, in all probability, alternate from time to time with the fluctuating conditions which would probably occur in their respective markets. It is of very great importance from the point of view of increasing our future invisible exports, as well as with the object of investing abroad for the benefit of our industries, that at the present time we should supply those demands as far as possible, provided we can do so with safety.

"No one can foretell with any degree of certainty what part America's surplus gold will play in the world's economic system or how and when it will be absorbed. The present surplus may become available for the world's needs, if and when the power of other countries to draw gold is restored. In that case, history may once again repeat itself, and as, after the French Revolution, the great accumulation of gold in England was gradually dispersed, so again there may be a re distribution of gold, when a common level of prices has reasserted itself and exchanges are re-adjusted, with a return to normal trade condition.

"Again there is the possible, though unlikely, alternative that the surplus gold may be permitted to form a basis for fresh credit in the United States upon the existing legal conditions for a partial gold backing, and there might be a further and continuous rise in prices there, which would react on world prices. The handling of the problem is one of great importance

and it would seem to point to the desirability of co-operation between all those who would be chiefly concerned, and especially between the British and American Treasuries and the Bank of England and the Federal Reserve Banks, so as to avoid a too rapid release on the one hand, or too rapid deflation on the other, such as would result from unwise competition for the available supplies. In all probability it will be found necessary to affect economies in the use of gold, even after the gold now in the United States is fully distributed, because of the greater volume of credit and the higher level of prices as compared with pre-war times. It would for that reason be equally important that gold should not be lost to the world through passing into hoard, but should be available for the world's economic use."

Mr. Walter Leaf, the Chairman of the Westminster Bank, reviewed the history of British currency and proposed a more elastic method of note issue which would tend, on the one hand, to make the volume of currency more nearly proportionate to the needs of commerce and on the other hand, to prevent inflation through increasingly severe measures if the process is carried too far. He recommended that the outstanding Treasury Notes should be transferred to the Bank of England and the Bank Charter Act be completely remodelled to give that Institution the sole right of note issue. His proposal was that in place of a right limit for the fiduciary issue that more elastic currency provisions should be adopted similar to those of the Federal Reserve Banks of the United States permitting the issue of notes against gold reserves of between 30—40% and approved security subject to a progressive tax as the proportion of gold becomes less than the normal percentage of notes in circulation.

The Right Honourable R. McKenna, Chairman of Midland Bank, Ltd., introduced the subject of gold with the following words:

"Our return to the gold standard is the outstanding financial event of the year. Its profound importance to our currency and credit system is acknowledged, yet the final step was taken without noticeable disturbance, and our ability to cover and hold a free gold market has been firmly established. Precautionary arrangements were made in order to meet the possibility of an excessive demand upon our stock of gold, but notwithstanding some loss no occasion has arisen for making use of the facilities obtained in the United States. On what we may term its exchange aspect the operation was entirely successful; and our financial authorities may be congratulated upon their achievement, in which the sympathetic attitude of the American Bankers was a material factor."

He then went on to review the financial policy of Great Britain and the unemployment situation contrasting conditions in England with those of France and Germany showing the extent to which monetary policy has been responsible for conditions. In conclusion he dealt with England's future as follows:-

"It is not unusual for writers on the present-day condition in England to discover signs that the productive capacity of our country in competition with other nations has passed its zenith. They see in our figures of long-continued unemployment indications that we are no longer able to hold our former position, and believe that the tendency in future will be toward a progressive decline in our trade. These opinions are often expressed by persons who, though candid in criticism, are friendly in feeling. They deplore what they regard as the passing of a great people. I confess, however, that I do not share their opinion. Through all these years of trade depression we have still been the greatest exporters of manufactured goods in the world. Our trade has had to struggle through adverse conditions, but its vitality has not yet been seriously impaired. If these adverse conditions were all of a permanent nature, if they sprang from causes which marked a definite determination in our mental or physical capacity, there might be some ground for anxiety about the future. But I do not think this is the case. There is always room for improvement, and I believe the years of depression have been a testing time for us, and a warning to put our house in order. The exceptional depression has been largely due to temporary financial conditions, and for the reasons I have given, I have strong hopes that these are now coming to an end."

The main centres of the blanket industry are Muzaffarnagar and Najibabad though blankets are made in practically every district in the Province. The quality of the articles turned out by the members of co-operative societies at Muzaffarnagar and Najibabad is good, and some of the cloth compares by no means unfavourably with that of European manufacture except in finish, improvement in calendering being necessary. The weavers have to contend with competition from foreign countries, but the articles made in the Province find a ready sale. The main hindrance to improvement in the position of the industry is the difficulty in obtaining a sufficient supply of yarn. The bulk of yarn used is spun on the country *charkha*. The process is a slow one and the yarn is not uniform. It is unsuited for better kind of cloth. Machine-spun yarn is preferred, but it is not always procurable and the prices are high. The scheme for starting a factory for the manufacture of woollen yarn at Najibabad is not likely to mature as local support is not forthcoming. It has, therefore, been decided with the approval of the Board of Industries to start a small demonstration factory at the Government Textile School, Cawnpore, where there is an efficient staff for running a factory worked by motor.

Financial Notes from London.

Bank Nationalization.

London.—At the annual dinner of the British Overseas Banks Association Mr. A. M. Samuel made an important speech on the functions of the Bank of England and the domestic banks clustering around it. He pointed out the impossibility of maintaining our foreign trade without the facilities offered by the banking system and declared that it would be impossible to run the overseas banks as nationalized institutions, though that would be the logical conclusion to a system of bank nationalization. Of course, no one familiar with the machinery of banking and finance could for one moment contemplate with equanimity any proposal to nationalize banking and such a suggestion could only come from those who do not appreciate the absolute dependence of trade on the international credit system, which is to a very large extent a matter of intimate personal knowledge.

Gold in India.

Mr. Samuel then attacked with characteristic vigour the eternal problem presented by the disappearance of gold in India. He pointed out that the problem had existed from the time of Nero, and during the past three years not less than £100,000,000 worth of gold had been sunk in the quicksands of India. The difficulty is to know how to make the masses of India realize that the proper place of gold and silver is not round the ankles of their womenfolk, but in the coffers of the great banking institutions, though India is not alone in its failure to understand the beneficent functions of gold in the aggregate. It is extremely difficult to explain to uninformed people how it comes about that £50,000,000 worth of gold lying apparently dormant in the vaults of a banking institution can be used as a credit basis on which to raise a vast superstructure of industry and trade, while the same amount of precious metal when distributed among the population in the form of ornaments or in small hoards is to all intents and purposes useless. If the inhabitants of India could be induced to keep their money in the banks, a brighter day would immediately dawn for our Far Eastern Empire.

Taxation of Reserves.

In his reply to the deputation of the Federation of British Industries who waited upon him last week, and, as in previous years, pleaded for some remission of taxation on "reasonable" reserves of private and limited companies, Mr. Churchill gave for the first time some figures of the cost of this suggested "reform" which has been advocated by most business organizations. A reduction of 1*s.* in the income-tax on the reserves of public companies would, he said, cost the Exchequer about £11,750,000, and the proposal to make the reserves of private firms immune from supertax would mean a loss of £4,000,000 to £5,000,000 a year in revenue. Mr. Churchill raised the qustion whether this latter immunity could be logically restricted to only one class of savings. He foresaw the possibility of the professional man, the property owner, and a host of others claiming similar exemption.

Public Companies.

With regard to the reserves of public companies, he criticized the proposal, as put before him, on the ground that only one-fifth of the benefit would reach the great staple trades which are at present in most need of some relief. Thus, of the sum mentioned above, £1,500,000 would, he said, go to concerns operating abroad, £4,500,000 to the comparatively prosperous non-manufacturig trades, a little over £3,000,000 to sheltered or *quasi*-sheltered industries, and only £2,700,000 to coal, iron, steel, textiles, shipping, etc. As he was, however, in sympathy with anything which would lead to the accumulation of capital reserves behind the great producing companies, Mr. Churchill said he would bear the matter in mind, although there was no hope of dealing with it in present circumstances. He did not, however, think that in the form in which they had been put forward the proposals were likely to achieve the object in view. A report of the discussion was issued the same day—a welcome innovation on the part of the Treasury in these matters.

Mr. Churchill's Points.

While the frankness of the Chancellor's reply was appreciated, there was a feeling among the deputation that he had, in his criticism of their proposals, overlooked the fact that remission of taxation was asked for only on sums "reasonably" put to reserve and not on all reserves. Also the benefit to the great basic industries would obviously be proportionately greater the busier they became. It is also contended that, even if

the distribution of the benefit followed the lines indicated by the Chancellor, the fact that prosperous businesses would thereby be encouraged to expand still further would tend to stimulate the great staple industries by bringing them additional orders for plant, etc. The whole problem is, however, admittedly very difficult.

British Stability.

Lord Birkenhead speaking at the annual banquet of the Nottingham Chamber of Commerce recently said that he and his colleagues detected many evidences of a greater financial stability than they saw any signs 12 months ago. The reversion to the gold standard had produced consequences which, on the whole, must be pronounced almost entirely admirable.

They were also encouraged by the very remarkable growth in visible exports. At the end of what must have been the most difficult period in the history of shipping, the imports under the head of shipping were not less than £100,000,000 in the last 12 months. Adding to that a rough figure in relation to banking and brokerage services of £50,000,000, they had £150,000,000 represented under that head. It was indeed an amazing achievement after all we had had to contend with in that period. They were able, years after the Armistice, to remind themselves that London was still the financial centre of the world. Had they been asked in the last year of the war what country would have been in five years the financial centre of the world, he could not doubt that sorrowfully, without envy, but with profound regret, they should have reached the conclusion that the great Republic which had made immense and incalculable profits in the early days of the war, which—and he was making no criticism—entered very late upon the period of its own great contributions to the expenses of that war, and which had taken—and here again he made no criticism—a view of the world convenience of war repayment which had again involved us in grave and long lasting embarrassments, there must indeed have been many who could not have believed it possible we should retain that primary of which we had boasted so long.

Vexatious Regulations.

Recent Spanish Royal Decrees and the actions of the Spanish Customs House show a very decided protectionist policy on the part of the Spanish Government, which in some cases amounts to prohibition of the import of certain foreign goods. Thus a recent Royal Decree has ordered Spanish coal to be used in the following proportions by the industries named :-

Railway companies running important express trains, 85 per cent. and other railway companies, 90 per cent.

Metallurgical works to use the same percentage as at present but not less than 50 per cent.

Gasworks and other industries at present using only Spanish coal, 100 per cent.

Electric power, sugar, textile, cement, etc., 80 per cent.

The navy, 100 per cent.

Mercantile steamers engaged in coastwise trade, 100 per cent. (Liners can only buy foreign coal in the free ports.)

This decree has already called forth protests from imports of British coal into Spain, and has caused questions to be asked in Parliament.

A further demonstration of this ultra-protectionist policy is the alteration of the classification of goods under the Spanish Customs House tariff, by which a certain article previously classified as subject to a low duty is now classified as a different article, subject to a higher duty. This appears to be a subtle way of raising the duties without changing the Customs House tariff, as the only change made is that the Customs House calls the articles by different names from that by which they were previously known. This procedure stultifies, as far as those goods are concerned, the result of the commercial treatise between Spain and Great Britain.

This policy on the part of the Spanish Government is highly prejudicial to the manufacturers and exporters of Great Britain, and though every country is at liberty to form its own trade policy, in accordance with its wishes, yet it must be remembered that Great Britain is the best customer of Spain for her produce and metals, that she imports more from Spain than she exports to her, and that consequently a fair, if not a generous, treatment would be expected. It would appear that an appeal to that sense of fairness is the poor but only hope just now, as the present trade policy of the British Government would seem to prevent the possibility of retaliatory duties on Spanish produce being used as a lever on the Spanish Government.

British Industries Fair, 1927.

In view of the conspicuous success achieved by the British Industries Fair held last month in London and Birmingham, it has been definitely decided to hold the Fair again next year at approximately the same time.

The Government grant for publicity purposes overseas and at home undoubtedly contributed in no small degree to the satisfactory results of the recent Fair, and the President of the Board of Trade has announced the Government's intention to make a similar grant in connection with the next Fair. World-wide publicity will thus be given to the unique opportunity which the Fair will provide for obtaining first-hand knowledge of the resources of British industry.

Preparations for the Fair will be commenced at an earlier date than on any previous occasion. The attendance of buyers this year was very satisfactory despite the fact that the decision to hold the London Section of the Fair was only announced at a comparatively late date. There can be no reasonable doubt that the attendance of buyers at the next Fair will break records.

There are already many indications that there will be a very substantial increase in the number of exhibitors. Space will be let at cheap rates as before, and, in order to ensure that space will be allotted to them, firms eligible to exhibit would do well to intimate their intention at an early date. The Fair will be organized as usual, in London, by the Department of Overseas Trade, and in Birmingham by the Birmingham Chamber of Commerce.

Sesqui-Centennial International Exposition.

Funds for Government Participation.

Philadelphia, March 8th. 1926.—President Coolidge has signed the bill which appropriates $2,186,500 to defray the expenses of Governmental participation in the Sesqui-Centennial International Exposition to be held at Philadelphia, June 1 to December 1. The bill had previously been approved by the Senate and the House.

Secretary of State, Kellogg, and Secretary of Commerce, Hoover, comprising the Federal Sesqui-Centennial Commission, will appoint a Commissioner, to direct the Government's participation in the gigantic International Exposition.

Upon the newly appointed Commissioner will devolve the necessity of getting the departmental exhibits allocated. Of the $2,186,500, $1,000,000 will be used toward a building program at the Exposition.

Most of the Federal departments are ready to proceed with installation of their exhibits as soon as the new Commissioner designates their spaces and the amount of money to be allocated to each department.

In all probability the Army-Navy exhibits will be ready first, as the Congressional appropriation specifically set aside $350,000 for the Navy, of which amount $250,000 is to be used for rehabilitating the Philadelphia Navy Yard, part of which is in the Exposition grounds. The amounts to be given to the other departments will be designated by the new Commissioner.

The cost of the Exposition will exceed $24,000,000, of which the City of Philadelphia is paying nearly $12,000,000.

Philadelphia's Contribution.

Appropriation of $1,000,000 from an emergency loan for the Sesqui-Centennial International Exposition, to be held in Philadelphia for six months starting June 1, has just been approved by the Philadelphia City Council.

This additional money brings the total amount so far granted by the City of Philadelphia for the Exposition to $8,700,000, exclusive of $3,000,000 by private citizens and organizations.

Persia to Participate.

That Persia will participate officially in the Sesqui-Centennial International Exposition at Philadelphia, June 1 to December 1, was made known last week through a communication received from B. M. Kazemi, Charge d'Afaires of the Persian Legation in Washington.

A representative of the Persian Government will leave shortly for the United States to superintend the construction of a pavilion according to the letter, which requests that Exposition officials assign a suitable location for the building.

German Exhibits at Exposition.

The development of German industries since the world war will be shown at the Sesqui-Centennial International Exposition in Philadelphia, June 1 to December 1, in a series of exhibits, for which 10,452 square feet of space have been reserved in the foreign

department of the Palace of Agriculture. Food and Dairy Products, and 18,000 square feet in the Palace of Mines and Metallurgy and Machinery. Plans for the extensive exhibits were made by Frederick Schrokauer, of Berlin, who represented 140 German firms.

PALACE OF EDUCATION.

A separate building for educational exhibits at the Sesqui-Centennial International Exposition in Philadelphia, June 1 to December 1, has been assured by the action of the Board of Directors of the Exposition which appropriated $250,000 for that purpose at its meeting last week.

According to Joseph R. Wilson, Director of the Department of Education and Social Economy of the Exposition, the Palace of Education will contain one of the most comprehensive showings of the mechanics of education ever assembled. There will be reproductions of open-air schools and exhibitions of many systems relating to backward children, tests and measurements used in the mental and physical development of children, special education in arts and crafts, and demonstrations of the care of defective children.

A spectacular safety exhibit is being arranged for the Department of Education by a newly appointed Safety Committee headed by Dr. R. H. Lansburgh, Secretary of Labour and Industry of Pennsylvania. Safety in the home, in the street and in industry will be illustrated in graphic form by the most advanced precautionary measures. All the resources of the Department of Labour and Industry of the State have been placed at the disposal of the Committee, according to Dr. Lansburgh, and close co-operation has been volunteered by such agencies as the National Safety Council, the Pennsylvania Safety Engineers and the Citizens' Safety Committee of the Philadelphia Chamber of Commerce.

Among the foreign nations which have promised to contribute displays illustrating the progress in education is Japan, whose co-operation has been promised through Tsuneo Matsudaira, Japanese envoy to the United States.

The stadium erected at the site of the Sesqui-Centennial International Exposition to be held in Philadelphia, June 1 to December 1, will seat 100,000 persons. It is practically completed.

FOREIGN EXHIBITS TO EXPOSITION.

Captain A. C. Baker, Director-in-chief of the Sesqui-Centennial International Exposition to be held in Philadelphia, June 1 to December 1, sailed for Europe last Saturday on the *S.S Majestic* in order to organize, expedite and ship exhibits from England, Holland, Italy, France and Germany.

Captain Baker carries with him plans of all the exhibits palaces, as well as of League Island Park, and he will be in a position to definitely allot space and settle all questions that may arise regarding costs, method of shipment, customs regulations, etc.

The trip to Europe is being made because there is no longer time enough to permit correspondence on the matters involved. Captain Baker will be in Europe about three weeks.

Indian Economic Notes.

Wireless in India.

1*st April*, 1926.—The annual report on Posts and Telegraphs of India for 1924-25 gives some interesting details of what may be described as the beginning of broadcasting in the country. It states that experimental broadcasting by the radio clubs in Calcutta, Bombay and Madras stimulated public interest and caused an increase in the number of licences for receiving stations. In the last seven months of the year over 1,000 licences were issued in a new form. They are obtainable from certain head post offices, and cover the use of receiving sets in British India, except Baluchistan and the North-West Frontier Province. Licences for fixed stations continued to be issued for transmitting and experimental purposes; 81 of these licences were renewed, and 220 new licences were granted during the year. In future fixed station licences will not be necessary for receiving stations, owing to the introduction of broadcast receiver licences. The import of wireless apparatus is restricted to those who possess licences for the purpose. At the end of the year 90 such licences were held. There will be, no doubt, a very rapid increase in the number of licences for wireless, now that broadcasting is to be conducted on a commercial basis by the company recently granted an exclusive contract.

The number of radio telegrams exchanged with ships at sea by coast stations in India and Burma was nearly 20,000. A certain number of official telegrams was also exchanged with the British naval station at Matara, Ceylon. The service between Burma and the Malay Peninsula, *via* Rangoon and Penang, continued to work satisfactorily. Communication was also established between Rangoon and Sabang (Sumatra) for meteorological purposes. Wireless communication with Kabul, *via* Peshawar, was maintained, and traffic was passed whenever the condition of the land line necessitated it. The Marconi Arc station erected for the Chinese Government at Kashgar continued in operation and exchanged official messages with India *via* Peshawar.

Facilities have been offered by coast stations whereby ships at sea equipped with direction-finding installations can obtain bearings on the coast stations as an aid to navigation. Bearings thus obtained on Diamond Island in unfavourable weather have been particularly valuable, and results elsewhere have been satisfactory. The report further states that the British Official Press *communiques* from Oxford radio were received at Jutogh and passed to Reuter's Agency for distribution to subscribing newspapers. As usual, this service was interrupted for some weeks during the hot weather owing to weak signals from Oxford and atmospheric interference.

MANUFACTURE OF MACHINERY IN BOMBAY.

The Annual Report of the Department of Industries, Bombay Presidency, for the year 1924-25 states :- Two large works have lately been established in this Presidency for manufacturing machinery suitable for agricultural and small industries. These are the Satara Industrial Works at Satara and the Great Eastern Engineering Co., Ltd., at Bombay. The Satara Industrial Works manufacture agricultural implements, such as, iron ploughs of various kinds, sugarcane crushers, rope-making machines, etc. They have largely extended and equipped their works with modern tools during the year, putting down a large gas engine to drive their workshops. The ploughs and other articles manufactured at these works are well spoken of and are in good demand. The Great Eastern Engineering Company have lately put down a large workshop and foundry at DeLisle Road, Bombay, occupying an area of about 60,000 square feet, and are well equipped with high speed machine tools for manufacturing cotton gins, corn grinding mills, rotary oil mills, sugarcane mills, pumps, groundnut openers, saw benches, etc. The special features of some of the machines turned out by the above-named works as compared with those of the imported ones are that practical experience gained in this country on the spot under local labour and local circumstances has been brought to bear on the designs and constructional details of these machines. As, for instance, large accumulated experience is now available in this country regarding the difficulties and defects that often come across in working the imported cotton ginning machines which, if made in this country, could be greatly improved so as to eliminate them. Similarly rotary oil ghanis, flour grinding mills, etc., must be designed to suit and answer the local demands and local circumstances which are often different in various districts.

AGRICULTURAL RESEARCH IN BENGAL.

A Resolution on the Report on the operations of the Department of Agriculture, Bengal, for the year 1924-25 states :—Important experiments continued to be carried on in the Fibres, Botanical and Chemical Sections. In the Fibres Section jute continues to receive special attention. The work on the new race of jute D. 27, which appears to be at least equal in yield to the previous departmental selections and even superior to them in quality, is still in progress. An interesting investigation is also being made with a view to determine whether variety or environment is the main factor affecting the quality of fibre. Work on other fibres such as sunn hemp, rhea, sisal, etc., is still in progress. The departmental races of rice evolved in the Botanical Section are being extended in the localities suited to them. The main line of work now in progress in this section is the selection of races of rice suitable to the drier tracts of Western Bengal, and of improved strains of the *balam* paddy of Bakarganj. An improved race of transplanted paddy known as *dudshar*, which is nearly as heavy a yielder as *indrasail*, has made rapid progress in the Malda district. In the Chemical Section important work is being carried on with sugarcane and tobacco. Yellow Tanna cane continues to spread rapidly. Over two lakhs of cuttings were distributed during the year under report. One of the Superintendents of Agriculture was placed under the Agricultural Chemist for special work on sugar as well as for assisting in the work of seed supply and demonstration. The new cane C. O. 213 did well at Dacca, Rajshahi and Berhampore.

Sericulture in Bengal.

A Resolution on the Report on the operation of the Department of Agriculture, Bengal, for the year 1924–25 says :—In the year 1923 the Bengal Silk Committee was reconstituted on a popular basis, the silk-rearing and trade interests being represented on it. The main function of the Government nurseries continues to be the rearing of disease-free stock. The nurseries produced 17,380 *kahans* of seed cocoons and the receipts amounted to Rs. 75,275. Better manuring has resulted in an increased yield of mulberry leaf with the consequent reduction in the quantity of leaf purchased from outside sources. The policy of the propagation of disease-free seed through the agency of selected rearers, under departmental supervision has been attended with encouraging results. Ten new seed farms were started during the year, bringing the total number to 52 in the districts of Malda, Birbhum, Rajshahi and Murshidabad. The selected rearers are reported to have raised between 14,000 and 15,000 *kahans* or nearly as much as raised in the Government nurseries. The reelers' and rearers' co-operative societies in the several districts are reported to be doing good work. The report makes mention of the progress made in the introduction of the silk-rearing industry amongst the *bhadralog* classes in the neighbourhood of Behala in the 24-Parganas with the assistance of Mr. S. N. Roy, M.L.C., who is a member of the society formed for the purpose. It is hoped that the interesting demonstration work, which is being carried on under Miss Cleghorn in the 24-Parganas district, will result in popularizing sericulture as a profitable occupation to educated young men of the *bhadralog* class. At Mymensingh, the Central Co-operative Bank has taken up the work of rearing with a view to encouraging the development of sericulture in the district. Encouraging results have been obtained from the experimental plantation at the Dacca Farm. In the Bankura district good progress has been made towards the revival of the silk industry and steps have been taken for the establishment of a nursery at the Vishnupur sub-division of the district. A scheme for propaganda in the 24-Parganas and Malda districts on the lines indicated in the report is at present under the consideration of Government.

The Java Sugar Crop.

The Secretary, Sugar Bureau, has received from his Java correspondents a cable dated the 26th March, 1926, intimating that the United Sugar Producers' Association in that island have issued a first estimate of the 1926 sugar crop which places the sugar production of the Associated Sugar Factories at 1,818,458 tons as compared with 1,792 480 tons estimated in the first forecast for the 1925 crop, issued about the same time last year. The preliminary nature of this first estimate may be seen from the fact that the final production of 1925 reached 2,040 720 tons for the Associated Mills alone, an increase of some 250,000 tons over the first estimate.

The production of sugar by mills outside the United Sugar Producers' Association in this coming campaign is now estimated at 188,282 tons against the corresponding estimate of 212.508 tons in 1925. Here also the final output in 1925 exceeded the original estimate and amounted to 239,780 tons.

Thus the first forecast of the whole Java crop for 1926 places the production at 2,006,740 tons against the corresponding figure of 2,004,988 tons last year and a final production of 2,280,500 tons in 1925.

The Madras Government are pleased to appoint the following gentlemen as members of the Standing Advisory Committee on Industries and Fisheries in the places of Sir James Simpson and the late Dewan Bahadur W. Vijayaraghava Mudaliar :- Messrs. C. E. Wood, M.L.C., R. Veerian, M.L.C.

A Resolution of the Bombay Government states :—The question of the abolition of the post of Director, Labour Office, has for some time past engaged the attention of Government. Government have now decided that the post of the Director should be abolished from 1st March 1926, the date from which the leave granted to Mr. G. Findlay Shirras (the incumbent of the post) expired. The work of the Labour Office should be entrusted to the Director of Information who should be styled Director of Information and Labour Intelligence.

The eucalyptus grows readily in California, New Mexico, Arizona, and Florida, and because of the climate in those States trees could probably be brought to pulpwood size in less than ten years. The United States at present is largely dependent for newsprint and wood pulp on imports from Canada and, to a smaller extent, on the Scandinavian countries. Newsprint imports from Canada alone in the first ten months of 1925 amounted to more than 2,155,000,000lbs. valued at $78,404,000 (£15,680,000).

Topics in the Journals.

Mobilizing Indian Capital.

The following extract from a Special Article contributed to *The Financial Times* (London) of 15th March, by Mr. H. A. S. Lindsay, C.I.E., C.B.E., Indian Trade Commissioner, London, ought to be read with interest :-

The development of India's material resources is a problem involving three chief factors—labour, finance and transport. The resources are three, in the soil, in forests and in mines, and much has been done to develop them, but more yet remains to be done. The training of labour and the extension of chief transport facilities in themselves constitute problems to the solution of which every day contributes its experience, though there can be no short cut to immediate success. The finance has hitherto been supplied largely from external and chiefly British sources, but local capital is available and only awaits mobilization.

The question of mobilizing India's financial resources was recently the subject of investigation in India by a special committee of inquiry, whose findings were published towards the close of 1925. Expert witnesses giving evidence before the Committee were unanimous in the opinion that there is sufficient potential capital in India to meet the larger part of India's industrial requirements, but that it is timid, conservative and requires to be drawn out. As it is, Government, Municipal and Port Trust loans meet with a ready response in India. Government rupee loans have increased during the past ten years from 145 to 358 crores (£240 millions), while the paid-up capital of joint stock companies registered in India has risen during the same period by more than 200 per cent from 80 to 254 crores (£170 millions).

Banking Facilities.

The development of banking facilities was a subject which received careful attention at the hands of the Committee. "Considerable progress", they reported, "has been effected by the creation of the Imperial Bank of India and the opening of new branches, and by the measures taken by the Government to popularize its loans and cash certificates, but we think that more intensive action is desirable. Co-ordination is required, and a general survey should be undertaken to show what the position actually is and in what fields further progress can be effected....The first essential is to increase the facilities for deposit and investment, and this entails both the creation of new branches of the Imperial Bank and the extension of the activities of existing banks and the formation of new banks."

"Indigenous banking system should also be examined to ascertain how far it may be possible to fit it into a modern system of banking."

An Institute of Bankers.

The Committee went on to advocate the creation of an All-India Institute of Bankers which should provide a comprehensive scheme of banking education, combining practical with theoretical training. They suggested that Public Debt Office facilities should be extended to more important commercial centres outside the Presidency towns, so that all transactions in Government securities could be effected locally. Local markets would thus be created for these securities, and local stockbroking would be encouraged, leading Industrial Debentures and Ordinary Shares. So far as agriculture is concerned, the Committee drew attention to the many schemes suggested for the extension of long-term credit either by direct Government assistance or through land industrial banks. These schemes for the mobilization of agricultural credits required co-ordinated examination so that they might be woven into the fabric of the general banking system. Finally, they recommended an inquiry into the various forms of negotiable instruments circulating in India, with a view to the development of those found to be the most suitable.

A comparatively recent development has been the growth of co-operative societies, which provide financial accommodation and also advances of seed. These societies have developed rapidly, as the following figures show :-

	1913-14	1923-24
No. of Societies	14,881	46,545
No. of Members	695,998	2,339,789
Share Capital	£4,969,000	£25,430,000

The importance of the co operative societies lies not merely in the extension to agriculture of cheap credit facilities, but also in the attraction of private deposits under a system which maintains the joint and several liability of the members. The attraction of private deposits is almost the most important aspect of banking in India, for on the means adopted to this end depends the successful mobilization of indigenous capital resources. Reference has already been made to the success which has attended the floatation of rupee loans by the Government. No less successful has been the adoption of a system of post office cash certificates, which have increased from a total value of less than £3,000,000 in 1921-22 to over £5,500,000 in 1923-24. Ten years ago the Indian joint stock banks, 41 in number, with capital and reserves at less than £3,000,000 held deposits of £16,000,000. To-day their number is 69, their capital and reserves over £7,000,000 and their deposits nearly £32,000,000. The exchange banks have increased in number from 12 to 18 during the same period, their capital and reserves from nearly £8,000,000 to over £140,000,000 and their deposits in India from over £20,000,000 to over £45,000,000.

Imperial Bank of India.

But the chief event in the history of Indian banking during recent years has been the formation in 1921 of the Imperial Bank of India, uniting in one central institution, and to some extent modifying, the functions till then carried on by the three Presidency Banks of Bengal, Bombay and Madras. The amalgamation was effected by legislation, in pursuance of which an agreement was executed in January, 1921, determining the relations between Government and the bank. The principal terms of this agreement are :-

(*a*) That all the general banking business of the Government of India is to be carried out by the Imperial Bank ;

(*b*) That the bank will hold all the Treasury balances at its headquarters office and at its branches ;

(*c*) That within five years the bank will open 100 new branches, in addition to the 69 branches and agencies of the former Presidency banks ;

(*d*) That the management of the Public Debt will remain with the newly constituted bank :

(*e*) That Government will discontinue the issue of currency transfers or supply bills to the public, on the understanding that the bank will give the public every facility for the transfer of money between its local headquarters and branches at rates which shall not exceed rates to be approved by the Controller of Currency.

Subsequent events have proved the success of the new system. The five years allowed for the opening of 100 new branches expired on the 27th January, 1926, and the hundredth branch was actually opened on the 11th in that month. Two more branches have been opened since that date ; and the Imperial Bank has thus more than fulfilled its obligations in this direction. It takes time for a bank's new branches to develop, but there is every indication that those that started in accordance with the new regime have already facilitated the trade of India by making money more readily available ; and they may be expected still further to benefit the country by attracting deposits and developing the banking instinct.

Sir Basil Blackett, the Finance Member of the Government of India, in an address which he delivered recently at Delhi University referred to these developments in the following terms : "If the initiative of private persons in India, stimulated, encouraged and assisted wherever possible by Government action can make even a proportion of the capital now unproductively used available for productive enterprise, we can look forward with confidence to a very rapid improvement in the general economic condition of India. Once the capital is directed into the right channels, it will of itself seek profitable employment in the promotion of the agricultural and industrial prosperity with far-reaching results on the general standard of living, on the prospects of useful employment for University trained men, and on the economic and political progress of India as a whole."

German Progress in India.

For more than half a century the trade of India has been brought under annual official review, and in recent years the survey, with its numerous charts and diagrams and analytical tables, has been so elaborate that publication has not been possible until a good many months after the close of the period under consideration. Still it would be a mistake for business interests to pay little or no attention to the "Review of the Trade of India" in 1921–25, merely because it has not been available until near the close of another fiscal year. The writer, Mr. C. G. Freke, Director-General of Commercial Intelligence and Statistics, is both thorough and frank in his treatment of the manifold aspects of his subject, says the *Times*.

In its last issue reference was made to two recent public utterances in which the position of India as Britain's best market overseas was emphasized. But this fact should not lead to mere complacency when the Review, as mentioned in the cables on its appearance in India a fortnight or so ago, calls attention to three striking unwelcome tendencies. It shows, first, that there has been a decline in the British import trade, though Great Britain is purchasing more and more from India ; secondly, that Germany has regained her pre-war position in the Indian market : and, thirdly, that Japan has doubled her exports.

British Shipments

Before the war India imported from this country no less than 64.1 per cent of her total mercantile purchases. As recently as 1922-23 the percentage was 60.2, while in the year under review it had fallen to 54.1. To this quota cotton manufactures, including twist and yarn, accounted for no less than 49 per cent as compared with 42 per cent in the two preceding years. The other important groups, *viz.*, metal and manufactures, machinery, and railway plant and rolling stock, were valued at Rs. 32 crores, or 24 per cent of the total imports, as compared with 32 per cent in the previous year. Machinery and mill-work showed a further fall in the year from Rs. 16 crores to Rs. 12 crores, and imports of railway plant and rolling stock fell from Rs. 11 crores to just half that value.

The improvement in the imports of instruments and apparatus, chiefly electrical, in the previous year was not maintained, the value declining by 11 per cent. The quantity of paper and pasteboard increased from 35,000 tons to 36,000 tons, though there was a small decrease in value. There was similar divergence between quantity and value in the case of liquors and coal and coke. A factor in this decline in values is, of course, the appreciation of rupee exchange. There were noticeable increases in the imports of woollen piece-goods, piece-goods of mixed cotton and artificial silk, tea chests, provisions, raw cotton, motor-cars, and raw wool, while there were decreases in synthetic dyes, copper, and parts of ships. In motor vehicles the United Kingdom had 29.3 per cent of the imports as against 26.2 per cent. in the preceding year.

Cotton Goods.

It is noteworthy that the reduction in the British percentage of the cotton piece-goods in comparison with pre-war days is due almost entirely to Japanese competition. Our share of the shipments in 1913-14 was no less than 97.1, while that of Japan was only 0.3. In the last fiscal year our share was down to 88.5, while that of Japan had risen to 8.5. The small progress made by the United States has been counterbalanced by a fall in the supply from the Netherlands, and other countries have advanced since pre-war days from only 1.5 to 1.9 of the total shipments.

In iron and steel the United Kingdom lost ground, supplying 63 per cent only, as compared with 67 per cent in the preceding year and 70 per cent. in the pre-war year. The share of the United States, although higher than before the war, decreased as compared with the preceding year, while those of Belgium and Germany improved. In machinery we maintained our dominant position, although Germany improved her share somewhat. Under hardware the share of the United Kingdom fell by 6.8 per cent to 40 per cent and here again Germany made substantial progress at the expense of this country, the United States and Japan ; her share rising from 21 per cent to 26.9 per cent.

German Activity.

Under railway plant and rolling stock our share declined from 94.1 per cent to 89 per cent while the United States, Belgium, and Germany secured advances which made their proportions 2.8, 3, and 1.2

per cent respectively. Under "instruments" Germany considerably improved her position at the expense of the United Kingdom, while the shares of the other countries remained practically unchanged. In liquors our share decreased, while that of France and Germany improved. In paper Germany improved her position at the expense of this country, Norway and Sweden.

These advances enabled Germany to maintain her position as fourth in order of importance in India's foreign trade, as in the two preceding years, the total volume growing by 18 per cent. Her exports before the war averaged in value under Rs. 9½ crores, while their value in the last fiscal year was Rs. 15½ crores. There are some departments of trade in which she was unrepresented before the war, but in which she has now gained a footing, and others in which she has made rapid advance. The former categories include bobins, buttons, and artificial silk, and the latter brass goods, cycles, printing materials, and drugs and medicines.

American Business.

The United States continues to occupy the third place in India's foreign trade. The principal articles imported therefrom were mineral oil, machinery and mill-work, motor vehicles, and hardware and iron and steel. These five articles accounted for 68 per cent of the total value of the imports in the year under review, as compared with 70 per cent in each of the three preceding years. The shipments of mineral oils rose from 58,000,000 gallons to 71,000,000 gallons, but those of iron and steel fell from 18,200 tons to 16,900 tons. Motor-cars increased somewhat in number, although there had been a big rise in the preceding year. Imports of motor omnibuses, motor-vans, and motor lorries also increased, while motor cycles showed a fall. There were decreases under aniline dyes, electrical instruments, and cigarettes, while raw cotton, grey cotton piece-goods, provisions, and apparel improved. The value of railway plant and rolling stock imported was about the same as in the preceding year. In his last report Mr. Ainscough, H. M. Senior Trade Commissioner in India, pointed out that the success of American exporters is greatest in those articles in which standardization and mass production have brought prices down to the reach of the Indian market. In the majority of other trades, such as textiles, iron, and steel, the high costs of production in the States militate against any very extended sale.

India's Market in Britain.

Something should be said of recent tendencies in the purchases this country makes from India, for, as the High Commissioner for India pointed out last week, a good demand from this country encourages the sale of our commodities to India. Our share of Indian exports tends to rise. It was 23.4 per cent in the last pre war year, and is now 25.5 per cent. The American share, though it expanded after the war, is now down to 8.8 per cent, which is near the pre war level. Japan, mainly on account of her absorption of raw cotton, has advanced her share since 1913-14 from 9.1 to 14.3 per cent, while the German proportion has declined from 10 6 to 7.1. The share of the British Empire, outside this country, is rather over 13 per cent.

The largest individual item of our purchases from India is tea, the value of which last year was nearly Rs. 30 crores, as compared with less than Rs. 9½ crores as a pre-war average. Wheat takes the second place with a value of Rs. 11½ crores, but this is only a crore more than the average of pre-war days. Other items bring up the total value of food grains to nearly Rs. 17 crores. Next follow raw and manufactured jute (Rs. 10½ crores), seeds (Rs. 8 crores), raw and tanned hides and skins (Rs. 6½ crores), raw cotton and raw wool (Rs. 4½ crores) each, and lac (Rs. 1½ crores).

The articles so far mentioned represented 81 per cent of our purchases from India, being the same proportion as in the previous year. The increases in quantities of wheat, barley, and rice were noteworthy, as were also those of raw jute gunny bags. In seeds there was a decrease of over 11 per cent in quantity and of 10 per cent in value. The quantity of raw cotton we took fell from 290,000 bales to 162,000 bales. Raw wool increased from 34,000,000lb. to 47,000,000lb. Shipments of coffee, myrobalans, rice bran, pig lead, mica, groundnut cake, paraffin wax, raw rubber, and raw hemp increased, while molasses decreased from 32,000 tons to 17,500 tons and manganese ore from 310,000 tons to 195,000 tons.

When due account is taken of changes in value it is clear that while the volume of the export trade in India now exceeds that of 1913-14 the trade on the import side is still far short of full recovery. One reason is that the price index number for exports is 154, while for imports it is 180. Measures tending to increase the cost of production operate as the greatest handicap to our export trade to India.

Training the Hand.

Dr. Thomas Jesse Jones, Special Adviser to the United States Bureau of Education, Director of Research at Hampton Institute, Educational Director of the Phelps Stokes Fund, Doctor of Philosophy and Fellow in Sociology at Columbia University, writing in the *New York Times*, shows that in America, as in India and elsewhere, the question of the right kind of education is being eagerly discussed.

"To put the matter in a nutshell. A boy when he leaves school or college should be able to answer the question - *How am I to earn my living; and, how am I to serve my neighbour*? For girls also, whether they are destined to be married or not, these questions are vital to true success in life," writes Dr. T. Jesse Jones.

"The school should present to the pupil a coherent picture of the world, civic, national and international, in which he has to play his part. The use of the soil for the production of food and the manufacture of commodities, the application of science to the service of man, the operations of trade, the meaning of politics, the duty of the vote, the method of government - whatever else is or is not taught, of these matters there should be nothing left to chance.

The Claim of Home.

"There should be careful insistence on the choice of a vocation; that all useful vocations are equally honourable: that the main objective is not the financial reward attaching to a vocation; that the first essential is to be fully prepared for the task in life. Much restless migration would be prevented if education were more attentive to the needs of the immediate community.

"The emphasis of architecture and publicity is

laid, not on homes, but on hotels, churches, colleges, railway stations, sky-scrapers, monuments, theatres and other institutions. But the social unit on which depends the nation is not any one of these. It is the family. The spell of large institutions has overshadowed the claim of home. And much waste has been caused by the constant endeavour to increase the size of homes and to elaborate the display of luxuries within them. A false road to happiness is thus suggested—not quite, not comfort, not even affection, but excitement, variety, the external.

A "Thrilling" Enterprise.

"Home building is, after all, the most thrilling of all human enterprises. To get the most out of incomes, usually limited, to rear clean, healthy and considerate children, to attain the right kind of relations between parents and children, between husband and wife, between the rising generation and the grand parents—all this means not a task merely, but a call. In every school there should be close attention paid to the home life of every child.

Knowledge of all natural facts should be carefully imparted. For girls, dress-making, cooking and account-keeping should be compulsory subjects. For boys, the use of the hands is also essential, and they should be fully instructed in what is meant by the essentials of the home—the value of a garden, pride of house and how to buy it, to preserve it, to honour it.

Reverencing the Good.

"The fact that many women to-day adopt professional careers only increases the importance of setting before brothers and sisters alike what must be the greatest career of all. The home must ever be the training ground of youth for the responsibilities of age. Above all, it must be the conserver of individuality.

"The calling of the teacher, whatever be his subject, is a spiritual calling. To inspire a reverence for the good and beautiful, especially in human character, should be his main object. The question is not how much a boy or girl reads at school, but how much he will read when school is over.

"An ear for music, an eye for pictures, a mind for books, a hobby, a zest for games—these are the assets which make for happiness. Dependence on lectures and imposed instruction is not enough. The work of a citizen is what resources he has within his being."

Infant Mortality in India and Its Causes.

The mere recital of figures showing the death-rate of infants in India is of little value in itself: what we are concerned about are the reasons for such a high infant death-rate as exists in India to-day. At the last National Health and Baby Week Celebration held in Calcutta, large charts were exhibited, showing the infant mortality in various sections of Bengal, particularly around Calcutta. One chart read as follows: "Ten Babies Out of Every Thirthy-three Die Within the First Year of Life." Another chart showed the proportion to be ten out of every forty, and still another from a third section showed its rate to be ten deaths out of every forty-nine. From these figures you can see that in just three districts of Bengal the death-rate of infants is 30 per cent, 25 per cent, and 21 per cent respectively. In other sections of India the death-rate is much higher than this, says the *Calcutta Municipal Gazette*

Briefly speaking, (writes Dr. A. F. Clark in the *Herald of Health*) we can group the causes of infant mortality into two large classes, namely: hereditary causes of death, and acquired causes of death. The latter is by far the most important. We can dispose of the first class with a few words. Under this heading we might mention one disease which accounts for a goodly number of deaths every year. I have in mind syphilis; this is a disease which is transmitted from the mother to the child while it is still unborn. It often causes infants to be born prematurely; in such cases the baby frequently dies within a short time, in many cases the baby is born dead, what we term "still born"; in other instances the mother may miscarry before she has reached the fifth month of pregnancy. And still in other cases the child may be born at full term, with the stigma of the disease stamped upon it. When such babies are born, they may live to reach childhood, but frequently after a short life of from 2 to 6 months they die from the effects of the disease. Thus we may regard syphilis as one of the important causes of infant mortality.

Coming now to the larger group, that of the acquired causes of death in infants, we find on investigation that a large proportion of the deaths result from gastro-intestinal diseases; by this I mean affections which have to do with the digestive tract. And why should they not die, when you consider the manner in which the average Indian baby is reared: It is a wonder to me that more do not die. I suppose if I were asked to express in one word the greatest cause of infant mortality in India to-day I would say "Ignorance". Not ignorance on the part of the infants, but on the part of those who care for them, which generally means the mother or other relative. Ignorance of the laws of health; ignorance of the dangers of home medication; ignorance of everything which pertains to the welfare of the infant. These are the things which indirectly cause the death of infants. I say indirectly because ignorance leads to wrong practices, wrong habits of feeding and wrong living, and these lead to disease which results in death.

First in importance comes ignorance of the laws of health and of our bodies. Just as surely as we infringe upon the laws which govern our being we shall suffer, we shall have to pay the penalty for the transgression of Nature's laws. The infant is helpless, it only knows how to eat and sleep: some one must do its thinking for it, and if the mind which does the thinking is an ignorant mind, the infant partakes of the result of that ignorance, an dconsequently it suffers in one way or another. I will illustrate this. When a baby cries, the mother believes that it is doing so because it is hungry, and so she puts it to the breast, which of course stops its crying. It doesn't make any difference whether the child has been nursed just a few minutes before or not; it is crying now, so of course it is hungry and must be fed. The result being that the delicate stomach of the infant becomes overburdened with the continual work of digesting the milk, and sooner or later the stomach becomes upset and refuses to do its work properly. The infant then begins to vomit its food; it may also develop diarrhoea, owing to the upsetting of the digestive functions. If this state of affairs goes on, and the mother continues to

nurse the baby at irregular intervals, the baby will fail to put on weight, will become listless and fretful and gradually waste away and die.

Indirectly another fruitful cause of infant mortality is the common practice of feeding small babies such foodstuffs as rice, dal and plantains while they are still a few months old. The stomach of a baby of three months is about as well adapted to digesting plantains and other similar foods as our stomachs are adapted to digesting building bricks. But when you tell the fond mother of the baby that this is a wrong practice, she informs you that this cannot be, for her mother told her about it, so of course it must be true.

Education of the people by means of posters, lectures, pamphlets, demonstrations, etc., etc., offers the best solution to this difficult problem of ignorance. I use the word "ignorance" in the sense of being deprived of the necessary knowledge of hygiene, sanitation and the maintenance of health, and not in any derogatory sense.

Approximately one-third of the deaths during the first year are due to diarrhœal diseases or diseases of the gastro-intestinal tract, and it is towards the diminution of the number of deaths from these causes that preventive efforts are now-a-days conspicuously directed. As I view the matter, there is only one hope of ever reducing the high death-rates of infants in India, and that hope is found in the efforts which are put forth by the medical profession, by the various health organizations, and by the more enlightened communities to bring to the knowledge of the rising generation the facts regarding hygiene, sanitation, and personal purity. The growing children must be taught the facts about diseases and their means of transmission; they must be taught how to care for their bodies; they must be taught the functions of the different organs of the body. Then when these children are grown-up, and the babies are born, the mother will have been equipped with the knowledge of which her own mother was deprived, and she will bring to the baby her knowledge of how to care for it instead of her ignorance of it.

In a word, the rising generation must be taught preventive medicine on a small scale. The future of the medical profession lies among the lines of preventive medicine and sanitation more than along any other line. The greater percentage of deaths in infants are preventible.

I find that the average Indian mother seldom gives her baby a drink of water. I have talked with many mothers about the matters, they say that water is good for grown-ups but not for the baby. But when I ask why, they tell me that it just isn't good for them, and that settles the matter, as far as they are concerned. I suppose that the idea originated away back in the dim past somewhere, and has continued unchallenged to this day. When we consider that the functions of water in the body are to keep the blood stream replenished, to keep the tissues supplied with fluid, and to aid in the elimination of waste products through the kidneys, we see how very important water is to the body. If babies do not receive water to drink, the body must set to work and manufacture its water from the food which is taken in. It can get a part of the required amount of water from the milk which the baby takes in, but this does not supply a proper amount, and so the body has to get busy and make up the deficit in other ways. So we may say that a plentiful supply of fresh, clean boiled water is necessary for growing babies every day. It is essential that the water be boiled to make sure that no disease germs are alive when the water is drunk. We know that two common diseases of India, typhoid fever and cholera, are most frequently contracted by drinking contaminated water.

A baby of one month should be given about 2 ounces of cold, boiled water every day. As the baby grows older more water may be given until when it has reached four years of age it is taking about 12 ounces of water daily. In addition to water, fruit juices are very good for even small babies. The best juices to give to babies are orange and tomato juices. They contain pure water, as well as certain imperfectly understood substances to which we apply the term vitamin. We do not know just what these substances are; what their chemical composition is, or in just what manner they act in the body, but we do know that when these vitamins are lacking in the diet, or deficient in quantity, certain diseases are liable to develop. Beriberi is an example of such a disease which is caused by the absence from the diet of these vitamins, particularly one vitamin which is found in the outer coats of the rice grain, and which is lost in the process known as polishing the rice. So then, babies must receive vitamins, and the simplest way in which to administer them is by giving a small quantity of fresh orange juice daily. A baby of one month can take one teaspoonful of sweet orange juice daily, gradually increasing until at three months it is receiving the juice of half an orange.

Another bad practice is to allow the baby to place in its mouth anything which has touched the ground, or which has been mouthed by another person. How often do we see a little baby drop something and immediately pick it up and place it in its mouth. Here again some one else must do the thinking for the baby. A child should never place in its mouth anything, whether food or whatever it may be, which is not clean.

Space forbids comment on the value of a daily bath for the baby. I might also direct your attention to the common practice of dosing the baby with castor oil every day. This is an excellent way in which to produce constipation, for the oil produces such a thorough clearing out of the intestinal tract that constipation results. A baby only requires castor oil on an average of once a week.

The London Polytechnic.

"My first effort was to get a couple of crossing-sweepers, whom I picked up near Trafalgar Square, and offered to teach them how to read. In those days the Thames Embankment did not exist, and the Adelphi Arches were open both to the tide and the street. With an empty beer bottle for a candlestick, and a tallow candle for illumination, two crossing-sweepers as pupils, your humble servant as teacher, and a couple of Bibles as reading books, what grew into the Polytechnic was practically started....."

Could anything be more romantic than that thousands of young men and women to-day should owe their education and their bright prospects in life to the man who, as quoted

above from one of his letters, half a century ago sought out those two crossing-sweepers and gave them lesssons by night under an arch by Thames-side?—asks *Tit Bits*.

IN SHOEBLACK'S GUISE.

He was Quintin Hogg, father of the present Attorney-General, Sir Douglas Hogg, K.C., M.P., and founder of the great institution known as the Regent Street Polytechnic, London.

Quintin Hogg, an Eton scholar, was early impressed by the squalor of London's mean streets. "I felt as though I should go mad," he wrote, "unless I did something to help some of the wretched little chaps I used to see running about." He bought a shoeblack's outfit and, dressed in shabby clothes, sallied forth to learn what he could of the life led by the "down-and-out" boys of London. As a result of what he saw, he and Lord Kinnaird rented a room just off the Strand and started a ragged school.

That ragged school has developed into an institution that caters to-day for the educational needs of 17,000 fresh students every year. It holds 650 different classes every week. There are 500 teachers on its staff, and on any winter's evening 5,000 students may be found in its rooms.

Hogg's early experiences would have daunted most men. The neighbourhood in which he worked was a rough one; he went in constant danger of being bludgeoned. Once he was attacked by a gang of men who would have stabbed him to death had he not been quite so nimble in getting away.

Another time he was lured, on the pretence of being required to visit a sick woman, to a thieves' den, from which he escaped, by smashing a window, only in the nick of time.

The ragged school soon outgrew its one room, and Hogg took larger premises near Long Acre. A few years later he moved the institution into Long Acre itself; then, in 1882, he bought the Polytechnic in Regent Street, the lease and improvements costing the greater part of £150,000, most of which came out of his own pocket.

Previously the Polytechnic had been a museum of inventions and a place of entertainment.

Young men flocked to it in such numbers for spare-time instruction in various arts and crafts that in eight years its administration had to be taken over by a Board of Governors, with Hogg as President. For twenty years he devoted himself to its growth and development. He thought nothing of taking off his own coat and giving it to a boy obviously in need of warm clothing. No man could have been more completely unselfish.

There must be many Londoners who, returning home from work or pleasure in the small hours, saw a short, bearded man cycling slowly in the deserted streets. Few recognized in him the founder of the "Poly", and fewer still would have taken him for a victim of insomnia that kept him awake for nights on end. These terrible nights he would spend on his bicycle, pursuing sleep.

His death in 1903 plunged the youth of London into mourning. But the work went on, the duties of president being assumed by the great cricketer, Mr. (now Sir) J. E. Kynaston Studd, who for years had been Hogg's right-hand man.

"POLY" STUDENTS' TRIUMPHS.

"We are justly proud of the achievements not only of our founder but of our members and students in the fields of scholarship, professional attainment, and sport," Sir Kynaston said to the writer.

"The architect of Canada House, the splendid London offices of the Dominion Government and the High Commissioner for Canada, which were recently opened by the King, was an old student of ours. Another student in the same department of study has, I believe, one of the biggest architectural practices in New York; he has been responsible for the erection of some of the greatest skyscrapers in America. He came to the Polytechnic with an L.C.C. scholarship.

"Yet another architect who has made a name for himself in this country is an old Polytechnic pupil. He won the competition for the Sheffield War Memorial, which was to cost up to £200,000.

"The engineer in charge of the operations when the huge 72-ton girder was placed in position on Cannon Street Station railway bridge recently was a student in our School of Engineering up to July, 1922. Numbers of students have won scholarships for the different Universities."

World Population in 2226.

Professor Albrecht Penck, Director of the Berlin Geographical Institute, has attempted to forecast the future distribution and density of mankind over the globe, says the *Manchester Guardian*. His conclusions, which he will elaborate in a lecture before the Berlin Academy of Sciences, are briefly as follows:—

At present the world has about 1,800,000,000 inhabitants but according to Professor Penck it is capable of supporting about five times that number. It is true that some regions are already over-populated so that a vast shifting of maximum populations to areas now thinly inhabited will have to take place. Professor Penck thinks that the countries with a damp, hot climate and now largely covered with primeval forest could potentially support a population of 5,600,000,000 and making allowances for the struggle with climate and disease may one day support as many as half that number.

If the world's population increases in the ratio in which it has been increasing for the last fifty years, the world will, according to Professor Penck, be fully populated about three centuries from now.

FORECAST OF DISTRIBUTION.

He believes that Brazil will one day have more inhabitants than any other country. He reckons that it has a potential maximum of 1:200,000,000. The maximum figure he gives for China is 600,000,000 (the present population of China is not precisely known—it is probably between three and four hundred millions). He thinks the British Empire could also support 600,000,000 people (England 30, Canada 60, Australia 450, the South African Union 60 millions—apparently he assumes that when these figures have been reached India will no longer be part of the Empire).

Europe and Asia, instead of harbouring the vast majority of mankind, as they do at present, would have only about one-quarter of the world's total. Professor Penck calculates that in the temperate zones there would be about 34 inhabitants to the square kilometre and in the tropics about 107. He summarizes his forecast of the world's population three hundred years from now in the following table:—

	Population of world in thousand millions	Percentage of Total. Europe & Asia	Africa	Australia	N. America	S. America
		%	%	%	%	%
Present	1.8	80	7	6	9	35
Potential .. .	8.0	96	29	60	14	250

These figures, of course, provoke a great many doubts. What will be the effects of tropical climates on the increase of the white populations? In what ratios will the white and coloured populations increase? To what extent will the capacities of different countries to support larger populations be influenced by the development of transport? Perhaps Professor Penck will answer such questions in his lecture.

Consumers' Co-operation and Education.

The Madras Bulletin of Co-operation for March contains some really valuable suggestions on the above topic. Prof. Marshall has said that "Co-operation is at once a strong and calm and wise business, and a strong and fervent and proselytising faith." And, Prof. K. B. Ramanathan commences his article saying that "Such a faith can flourish only when there is an efficient clergy strenuously preaching the doctrine. And hence the stress laid on the educational and propagandist side of its activities."

Proceeds the Professor:—

"The Co-operative Movement is itself an Educational Agency, giving those who take part in it an insight into business methods, a training in practical citizenship and an enthusiasm for Social Ethics which they could not obtain otherwise."

However the need for the members making themselves as intellectually efficient as possible is obvious. Prof. Stuart says:—

"Education is desirable for all mankind: it is the life's necessity for co-operators."

But, when, as Arnold Toynbee says: Elementary Education is provided by the State; religious education by the various religious bodies; professional and higher education by the Universities and technological institutions, etc., what part of education then is left for co-operators to appropriate?

Prof. Ramanathan answers:—

".....the education of the citizen. By this I mean the education of each member of the community as regards the relation in which he stands to other individual citizens and to the community as a whole. Education in connection with co-operation may mean Education *by* co-operation, or education *for* co-operation, or the *general* education of co-operators in various subjects. With regard to the first, no rules can be laid down. Where the movement is healthy, good results will follow. The second is a technical matter. This is the education given by co-operative Societies or Federations to members, secretaries, managers and committee men in order to fit them to carry on as well as possible the business of the Societies, to understand and observe the rules, to appreciate and foster the ideals of the movement. It may take the form of practical instruction by co-operative officials and employees, publication of books and newspapers on matters co-operative, lectures by travelling agencies, holding of classes, and institution of libraries and reading rooms. Then, there is the third kind, the *general* education of co-operators in various subjects in order to make them play their parts as citizens. Such funds as are available for educational purposes must be utilized for employing really efficient teachers who could handle most efficiently those subjects which are essential to the co-operative citizen and are not usually part of the courses of instruction provided in the schools maintained from public funds, such as, Practical Economics, Social Reform, Industrial History..... The safe rule will be to impart such knowledge as will be useful in nearly all kinds of circumstances, such as will supply a key to a great variety of things and above all such as will stimulate interest and develop character."

The article closes with almost a truism.

"The co-operative movement can be helpful to the members only as life experience is helpful to the growth of wisdom in man."

Forest Administration in India.

Mr. D. N. Bannerjea, sometime Member of the International Commission on International Co-operation of the League of Nations, has contributed a very valuable and lengthy article on the "Forest Administration in India" to the October-December, 1925, issue of the *International Review of Agricultural Economics*, Rome. The article, running into more than thirty pages, is a mine of information regarding the rise and progress of Forestry in India, from the earliest times to the present day. The care of Forests under the Aryans, the deficiencies and drawbacks of the old methods, the gradual development of Forestry under the early English, as well as the present state of affairs have all been presented with scholarly clearness, aided by ample quotations from official records and statistics.

Says Mr. Bannerjea:—

"Ample and conclusive evidence has been produced by a whole succession of forest experts that the wanton destruction of forests has changed the course of streams, silting up the bed and corroding the banks, so much so that places like Patna, which were once prosperous ports with an extensive commerce, have now become places of no importance whatever.... And, the accelerated exploitation of forests, dictated by military, naval and other requirements, has been aggravated by the triple injuries from shifting cultivation, cattle-grazing and the lighting up of conflagrations.....(But) happily these practices have now been abolished....Shifting cultivation has been prohibited, fire-protection is organized, sylviculture has followed upon the success obtained by aboriculture, and the system of licences whereby contractors cut, hacked & destroyed indiscriminately

has been swept aside. Forests are now either reserved or protected."

In the early stages prejudices against forest conservancy were many and it is noteworthy that there arose a conflict of opinion between the Civil Administration and the Forest Authorities. And,

"The net result of this tug-of-war between the two rival attitudes, has been a fairly satisfactory compromise which has left 180,000,000 acres as a permanent forest estate."

Before scientific forestry made its appearance, extraction and transport of forest products were conducted on primitive lines, involving much waste ; and no serious atempt was made to place the various kinds of valuable woods in the world market. And

"The Department has always urged that it has neither the time nor funds to undertake a systematic publicity, without which an extensive export trade resting on a profitable commercial basis cannot be built up."

And Mr. Bannerjea is quite correct in holding that,

"The only effective advertisement of the technical qualities of Indian timbers is the establishment of forest industries in the vicinity of Indian forests, and the sending over to fairs, exhibitions, Museums, etc., of the manufactured articles."

Then follows a full account of the organization and education of the Forest Staff from early times and refers, incidentally, to the stigma of inferiority involved in the distinctions between the imperial and provincial branches, and ends with the following happy note:—

"Happily, under the recent reconstruction scheme, these distinctions have been brushed aside, and in the Forest Departments of Bombay and Burma at least, no fully qualified Forester can now reasonably suggest that there is any restriction of opportunity or any bar to promotion to the highest officers, while to the Forest Departments of other provinces, capable and competent Indians can either be nominated in India, or appointed in England after competing on terms of equality with other candidates."

American Trade with India.

Exports and Imports.

Exports and Imports.

Total imports into the United States, February, 1926	$388,850,000
Total exports from the United States, February, 1926	$352,917,000
Excess of imports over exports	$ 35,933,000

Trade with India.

Imports from India to the United States, February, 1926	$ 13,542,000
Exports to India from the United States, February, 1926	$ 3,624,000
Excess of imports over exports	$ 9,918,000

Some of the more important items *exported* from the United States to India during February were as follows :—

Raw cotton	77,000 lbs.
Canned fruit	116,000 lbs.
Dyestuffs	119,000 lbs.
Kerosene	3,900,000 gallons.
Lubricating oil	3,013,000 gallons.
Machinery, all kinds	$ 597,000
Tinned plate	1,149,000 lbs.
Tinned sheets	3,696,000 lbs.
Tubes, pipes and fittings	824,000 lbs.
Bolts and nuts	91,000 lbs.
Automobiles	185
Trucks	40
Automobiles (Canadian manufacture)	672
Trucks (Canadian manufacture)	457

Note.—Total exports of automobiles and trucks from the United States to all countries in February were 22,355 and 15,877 respectively. Canada exported 5936 cars and 2,472 trucks.

Some of the more important items *imported* from India to the United States during February were as follows :—

Burlap	39,562,000 lbs.
Jute	7,000 tons.
Cotton	414,000 lbs.
Goatskins	2,259,000 lbs.
Shellac	2,136,000 lbs.
Tea	1,039,000 lbs.
Mica	202,000 lbs.
Castor seed	5,822,000 lbs.
Manganese ore	1,000 tons.
Wool carpets	110,000 sq. yds.

Trade with Ceylon.

Imports to the United States from Ceylon, February, 1926	$3,723,000
Exports to Ceylon from the United States, February, 1926	$ 195,000
Excess of imports over exports	$3,528,000

Some of the more important items *exported* from the United States to Ceylon during February were :—

Automobiles	44
Trucks	43
Automobiles (Canadian)	39
Trucks (Canadian)	39
Lubricating oil	63,000 gallons.

Important exports from Ceylon to the United States during February included :—

Tea	976,000 lbs.
Cocoanut products	900,000 lbs.
Rubber	3,577,000 lbs.

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Surma Amiri	.. 1	8	Monjai Best ..	0	12
Golden Snuff	.. 0	14	P. Frankincense (tin)	0	14
Royal Asafœtida (tin)	1	8	Black Cummin Seed lb.	2	0

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Detailed Contents.

	PAGE
THE REPORT OF THE INDIAN ECONOMIC COMMITTEE— *By S. Subbarama Aiyar, M.A., Dip. Econ. (Madras), Senior Lecturer in Economics, Madras Christian College*	187
THE MYSORE IRON WORKS ..	190
SUGGESTIONS TO A CITY CORPORATION— *By the Editor*	193
MUNICIPAL SAVINGS BANKS— *By A. Emil Davies, Chairman of the Financial Committee of the London County Council*	195
JAPAN AND INDIA— *By the Japan Cotton Spinners' Association*	196
UNEMPLOYMENT AMONG THE MIDDLE CLASSES— *By Sir P. S. Sivaswami Iyer* ..	204
ELECTRICAL PROGRESS IN 1925— *By D. N. Dunlop, Director, The British Electrical and Allied Manufacturers' Association* ..	207
SOME ASPECTS OF THE ECONOMICS OF WELFARE— *By K. R. Padmanabhan, B.A. (Hons.)*	209
ENCOURAGEMENT OF AGRICULTURAL RESEARCH— *By "Scrutator"*	210
TANNING INDUSTRY IN U. P. ..	212
INDIAN INCOME-TAX REPORT— *By Christopher Hay, M.A.* ..	213
IRRIGATION WORK IN INDIA— *By "Bystander"*	214
AGRICULTURE IN THE PUNJAB ..	216
INDIAN TIMBERS	216
ECONOMICS IN THE WEST	217
SESQUI-CENTENNIAL EXPOSITION ..	219
INDIAN ECONOMIC NOTES ..	222
TOPICS IN THE JOURNALS ..	224
MYSORE ECONOMIC CONFERENCE ..	229
PUNJAB ECONOMIC INQUIRY BOARD.	233
AMERICAN TRADE WITH INDIA ..	234
BOOKS IN BRIEF—	
The Evolution of Provincial Finance in British India	235
Borderlands of Economics ..	235
Occident and the Orient	235
English Constitutional History ..	236
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By S. Subbarama Aiyar, M.A., Dip.Econ. (Madras),

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"The rapid growth of collective interests," wrote the late Prof. Marshall, "and the increasing tendency towards collective action in economic affairs, make it every day more important that we should know what quantitative measures of public interests are most needed and what statistics are needed for them, and that we should set ourselves to obtain these statistics." The Indian Economic Inquiry Committee, whose Report has been issued, is of the same view and says that "the primary purpose of an economic survey is to collect and compile facts and statistical data relating to the economic condition of the people and it is too well-known to need any emphasis that numerous problems concerning the material well-being of the people of British India are to-day awaiting treatment under the guidance best supplied by an economic survey."

There is unfortunately no agreement between the members as regards the number and importance of such data to be collected by the Government agency. Sir M. Visvesvaraya and Pandit Hari Kishan Kaul would like to collect a large number of statistics based on an *extensive* survey of income (including production), consumption (cost of living), wealth (individual and collective), indebtedness, trade, transport, etc., as well as on *intensive* inquiries of typical villages and limited areas in every district for ascertaining income, wealth, cost of living, indebtedness, etc., of the people.

The Majority Report (as we may term the views of Sir M. Visvesvaraya and Pandit Kaul) classifies the existing statistical materials under three heads: (1) General statistics other than production, comprising finance, population, trade, transport and communications, education, vital statistics, migration, etc. (2) Statistics of production, consisting of agriculture, pasture and dairy farming, forests, fisheries, minerals, large-scale industries, cottage and minor industries. (3) Estimates of income, wealth, cost of living, indebtedness, wages and prices. We are told that statistics falling under class (1) are more or less complete, those under class (2) are satisfactory in some respects but incomplete or totally wanting in others, while no attempt has been made to collect those under class (3) on a comprehensive scale. The Majority Report gives elaborate schemes for collecting statistics under these several heads. To carry out this ambitious programme a Central Statistical Bureau is to be established at the headquarters of the Central Government presided over by a Director of Statistics with the requisite staff. Every province should have a Provincial Statistical Bureau with a Provincial Statistician at its head and a staff of assistants, usually one for every revenue division, to supervise the work in the districts. Moreover in every province there should be a Board of Economic Enquiry to advise the Provincial Statistician and, if necessary, to supervise the work connected with economic research. The total expenditure by the Central Government is estimated at about Rs. 45 lakhs of which nearly Rs. 16 lakhs is covered by initial outlay and by all

the Provincial Governments collectively about Rs. 44 lakhs of which the recurring outlay is about Rs. 28 lakhs.

Writing "as a statistician and as an economist" Prof. Burnett-Hurst, who appends a Minute of Dissent, says that "some of the principles and most of the details of the recommendations of the Majority together with the arguments advanced in support do not meet with my approval." The fundamental difference between Mr. Burnett-Hurst and his colleagues is that the former has no faith in the utility nor is he satisfied as regards the practicability of collecting elaborate statistics of income, wealth, indebtedness, prices, wages, etc., for the country as a whole using the *extensive* method so much stressed by the Majority. His main arguments against such a course are:—(1) India is very vast in area and population and therefore the cost involved will be quite incommensurate with the results achieved. (2) In India population is scattered and rural so that it is difficult, if not impossible, to collect accurate figures. (3) There are no private associations, as in Great Britain and the Dominions, to co-operate and assist in the collection of statistics. (4) The prevailing large number of scattered unorganized undertakings, mostly carried on by persons working on their own account, make statistical measurement not only extremely difficult but impossible to achieve without the employment of a large staff. (5) Such statistics, especially in India, are likely to lead one to false conclusions. Thus the "aggregate expenditure method", which has been adopted in several countries, is inapplicable to India as the mode of living in India differs not only between classes and classes but between provinces also in the most marked degree.

Professor Burnett-Hurst differs again from his colleagues on another point and says "that the so-called tests to be applied to ascertain the economic condition of the various classes of the people, such as individual and national income or wealth, are no tests at all, especially in a country like India, because the money value of the income of a family is no true index of its economic condition." Again according to Professor Burnett-Hurst "a figure of national income in no way throws light upon the economic condition of the various classes of the people and its compilation is very largely an academic exercise which should be left to statisticians, economists and other non-officials." Neither is the estimate of the income *per capita* of any great use except perhaps for arithmetical purposes but certainly not for comparison of one population with another. It is impossible, according to him, to get accurate figures of individual wealth.

According to Professor Burnett-Hurst, the best criterion of the economic condition of a family is its standard of living. It is best to select families representative of each class and to ascertain their standards of living and gather information on such points as production, indebtedness, wages, prices, etc., on an *intensive* basis. He is of the opinion that a mere investigation into income, wealth, expenditure and indebtedness will never enable us to ascertain the *causes* which produce the canker in the economic life of a country. He would permit the *extensive* method only for the collection of All-India statistics of production perhaps on the present lines with a greater eye to accuracy but without the elaborate staff as recommended by his colleagues. To use his own words: "It would be better to collect fairly accurate data or statistics to which the degree of accuracy can be assigned, even on a limited scale, rather than a mass of data of varying degrees of accuracy extending over a wider area." The Central and Provincial Bureaux should be responsible for the statistics collected by the *extensive* method. The *intensive* inquiries should be supervised by Provincial Boards of Economic Inquiry, composed of non-officials and constituted on the lines of the existing Punjab Board.

Such, in brief, are the main recommendations and the points of difference between the Majority and the Minority of the Economic Inquiry Committee. There are several points in the Majority and Minority Reports with which I find myself unable to agree. It is not possible to pick out statements of views individually, but I shall offer my comments on a few of them.

In the Majority Report, we are told at the very outset: "It should be noted that all the goods and services implied in the estimates of production, income or wealth are measured by a price. From a technical point of view, it is only when a price can be fixed that the income or assets of an individual or community become eligible for consideration in the economic regime." The basis for the Majority recommendation for a complete extensive survey is contained in this statement. However true this may be with reference to conditions in Western industrial countries, we in

India are still somewhat removed from this economic regime, though we are gradually approaching towards it. Thus statistics of production, income, expenditure, etc., arrived at on this basis require reinterpretation in the light of *real* income and *real* expenditure which are ascertained from the facts of economic life as revealed by intensive surveys of villages and communities.

Professor Burnett-Hurst, we see, is impressed with the difficulties and drawbacks of the statistical method. Much of what he says as regards the inadequacy of the so-called tests of economic welfare, such as statistics of income or wealth, individual and national, which the Majority advance in favour of their proposals, is applicable to all countries. Though there are some special difficulties in India, there is no reason why some attempts should not be made to collect statistics on these points. I agree with many of the criticisms levelled against the so-called tests by the Professor and see considerable force in his conclusion that these tests do not constitute a suitable criterion for measuring the economic condition of various classes of the people, but I am not sure on that account such statistics are useless altogether. To quote Professor Marshall on this point :- "Our judgments of public policy may be made much more trustworthy than they are at present, if they can be based on statistical measures of the relative quantities of the benefits and the injuries which different courses of public action are likely to cause to the several classes of the community. Much of the failure and much of the injustice, in which the economic policies of Governments have resulted, have been due to the want of statistical measurement. A few people who have been strongly interested on one side have raised their voices loudly, persistently and all together ; while little has been heard from the great mass of the people whose interests have lain in the opposite direction ; for, even if their attention has been fairly called to the matter, few have cared to exert themselves much for a cause in which no one of them has more than a small stake. The few, therefore, get their way, although if statistical measures of the interests involved were available, it might prove that the aggregate of the interests of the few has only a tenth or a hundredth part of the aggregate of the interests of the silent many." In the present period of our economic transition when the activities of the State as well as the pressure of economic forces from outside are increasing, the importance of well organized public statistics cannot be too much emphasized. In the absence of private efforts which is likely to continue for some time in India it is obviously the duty of the State to make arrangements for the collection of such statistics.

I agree with Professor Burnett-Hurst that in India "the best criterion of the economic condition of a family is its standard of living (para 15) and that the central feature of an economic survey should be a full and detailed description of the standard of living of different classes of the people which may be ascertained by collecting and analysing a large number of family budgets. I also agree with him that a mere investigation on income, wealth, expenditure and indebtedness will never enable us to ascertain the *causes* which produce the canker in the economic life of a country. It is also true that the term "economic" should not be interpreted in its narrow sense and associate it too closely with money and material things ; such inquiries should include a series of intensive and extensive inquiries into such subjects as the influence of disease on physical efficiency, the economic effects of restrictive social customs, sanitation in villages and towns, etc. (paras 17 and 18).

It is evident from para 29 of his Report that Professor Burnett-Hurst is not opposed to the collection of All-India Statistics of production on the extensive method. He is also in favour of strengthening the Central Bureau of Statistics and adopting a suitable provincial organization to supervise the work of investigators.

Thus though there is no agreement among the members as regards the number and importance of the data to be collected and on the question whether an elaborate Government agency is required for the purpose, there is the agreement that the best method is to combine the *extensive* and *intensive* methods of inquiry.

I am generally in sympathy with the full and comprehensive programme sketched out by the Majority, which may be regarded as the goal of our statistical endeavours. If it proves too big for the Government of India, a good beginning may be made by adopting the intensive method of study *provided* the inquiry and the organization are not confined to the mere investigation of the standard of living and the collection of family budgets as suggested by Professor Burnett-Hurst,

but also for collecting relevant statistics that explain the course and the results of public policy or the nature and pressure of economic changes. The proviso, I have added, is important and should be particularly noted. To quote Professor Marshall:- "No doubt statistics can be easily misinterpreted; and are often very misleading when first applied to new problems. But many of the worst fallacies involved in the misapplications of statistics are definite and can be definitely exposed, till at last no one ventures to repeat them even when addressing an uninstructed audience: and on the whole arguments which can be reduced to statistical forms, though still in a backward condition, are making more sure and more rapid advances than any others towards obtaining the general acceptance of all who have studied the subjects to which they refer." Though the difficulties in India are great there is no reason why we should not work our way towards this ideal.

To refer to a minor point in the Majority Report. "With a view to arouse public interest in the subject and to enlist public sympathy," write the Majority, "the appointment of the Director of Statistics should, preferably, be subject to the vote of the Central Legislature." This is entirely in keeping with modern ideas but adequate precaution will have to be taken to safeguard against partisan action.

The Mysore Iron Works.

Statement by the Board of Management.

[*The following Statement dated 30th April 1926, signed by Sir M. Visvesvaraya K.C.I.E. (Chairman), Sir K. P. Puttanna Chetty Kt., C.I.E., Rajas Sir Ismail Sait and Mr. J. D. Ghandy of Messrs. The Tata Iron & Steel Co., Ltd., Members of the Board of Management, Mysore Iron Works, Bhadravati has been issued to the Press:*]

The comments made from time to time concerning the Bhadravati Iron Works, both in the Press and in the course of the discussions in the Mysore Legislative Council, have shown that there is considerable misapprehension in the public mind regarding the real position of the Works. The Board of Management have not been publishing any particulars for the information of the public till now, because the work is a commercial concern and it is not usual in such concerns to discuss in public the details of profit and loss, market and freight rates, etc. But full information in the shape of periodical reports and printed notes are being furnished to Government from time to time. In order to remove misapprehensions for the future, the Board of Management at a meeting held on the 30th April 1926, resolved to issue a brief statement concerning the origin, present position and future prospects of the undertaking.

Inception of the Scheme.

The undertaking has passed through three stages, namely,-

(1) inception,
(2) construction, and
(3) operation.

The preliminary investigation in connection with this project was begun in 1915-16. After a thorough investigation by experts both in and outside the State, the scheme was sanctioned by the Government of His Highness the Maharaja in 1917-18. The first order for machinery was also placed in the same year with the consent of all the Members of Government concerned and the Agreement appointing the Tata Iron & Steel Co., Ltd., as Managing Agents was formally ratified in May 1918. Sir M. Visvesvaraya, who was Dewan at the time the scheme was sanctioned, retired from that office in December 1918 and the actual expenditure on the Works up to 30th June 1919, *i.e.*, up to six months *after* his retirement, was only Rs. 8.45 lakhs.

The Stage of Construction.

The construction was commenced in 1918 with Messrs. Perin and Marshall of New York as Consulting Engineers. The Tramways, Forest and Mining Sections of the Works were under the direct supervision of the Mysore Government. The Works were expected to be ready for operation by the end of 1919, but for various reasons briefly referred to below, the construction stage was prolonged for nearly 5 years or till January 1923 when the Blast Furnace was blown in and the operation began for the first time.

Formation of New Board of Management.

When the construction was nearing completion, several officers including a member of the firm of Messrs. Perin and Marshall were for closing down the Works but Mr.

Perin himself was opposed to such a proposal. At the request of His Highness' Government, Mr. Perin came over to Mysore from New York and started the operation. When he left in March 1923, the management of the Works was transferred to a new Board and at the request of His Highness' Government, Sir M. Visvesvaraya joined this Board as Chairman and he was vested with special powers and responsibilities. From that time up to the present, the management has remained in the hands of this new Board, which, besides the Chairman, is now composed of Sir K. P. Puttanna Chetty, Haji Sir Ismail Sait and Mr. J. D. Ghandy of Messrs. The Tata Iron & Steel Co., Ltd. In May 1924 the Agreement between the Government of Mysore and the Tata Iron & Steel Co., Ltd., was by mutual consent cancelled and the latter ceased to be the Managing Agents of the undertaking.

OVER-CAPITALIZATION DURING CONSTRUCTION.

It will be seen from the facts given in the Appendix that during the construction period, namely, 1918 to 1923, the estimated capital cost of the Works went up from Rs. 94 lakhs to Rs. 211 lakhs. Large purchases during a period of high costs, delay in the completion of the plant and absence of close supervision by a central administrative and engineering agency led to a very considerable excess over the original estimates. Change of design without proper sanction was also partly responsible for this large excess. That the original estimate was not an under-estimate will be readily appreciated when it is stated that works as originally designed could be installed to-day within the limits of that estimate. The actual outlay by the time the new Board took charge in April 1923 had risen to about Rs. 167 lakhs. The over-capitalization took place during the construction period for which neither the Members nor the Chairman of the present Board can take any individual responsibility.

Over-capitalization is the main defect of the Works at present. In a case of this nature, it is usual to write down the capital in order to cancel the excess expenditure not represented by available assets. This was done recently in the case of two out of the three other undertakings of a similar character connected with the manufacture of iron and steel on the Bengal side. It is a question for consideration whether a similar procedure should not, in the larger interests of the Works, be adopted in this case also.

IMPROVED OPERATION.

The operation of the Works has been gradually improved and stabilized during the past three years. Since October 1925 a special attempt has been made to cut down costs and re-organize the Works. The output of pig iron, which was about 30 tons per day during the first half-year of operation, has now risen to about 57 tons. Local Indian staff has been trained to do the work. The yearly manufacturing cost has been brought down from about Rs. 19 lakhs, estimated by Mr. Marshall in 1922, to Rs. 13.5 lakhs. For the past three months, in spite of the prices having reached the lowest level known, the receipts or the estimated value of the products manufactured practically balance the expenditure. Certain subsidiary industries have been started, such as, a pipe foundry and an alcohol refining plant which are expected to be completed by 1st July next and, thereafter, to yield some additional revenue on their own account.

ORIGINAL MISGIVINGS REMOVED.

Various misgivings entertained at the time the scheme was sanctioned are now found to be without any foundation. It was thought that the wood supply would fail. Not only has it not failed but a smaller forest area than originally contemplated is found to be sufficient to meet the needs of the plant. It was feared that the forests would be denuded. In actual practice, only waste material for which there is no other use, is being removed. The local Forest Department are able to assure the public that the forest conservation requirements are fully met. If anything, the exploitation is expected to improve the yield of timber in future years. The rates allowed in the original estimates for the collection of wood were at one time considered too low but in operation the costs have been even lower. There were apprehensions in some quarters that the products might not sell freely. By experience we find that the quality of our products is appreciated wherever it is used, whether in India or in foreign countries, particularly charcoal iron which has been pronounced to be a high grade iron.

EFFECT OF FALLING PRICES.

The loss in actual operation in three years has been Rs. 8.70 lakhs and that due to the writing down of the stock on account of market prices Rs. 5.16 lakhs or Rs. 13.86 lakhs in all. This may be considered as a subsidy given by Government, similar to subsidies or bonuses granted in the Dominions and in foreign countries. Much of the loss was mainly due

to the phenomenal fall in the price of iron, a special disadvantage from which the Mysore Works have suffered. The operation was started at a time when a trade depression of unprecedented intensity commenced. The price of pig iron which was Rs. 100 per ton in 1923 has been going down steadily and the decline has continued to this day. It is now Rs. 45 to 50 per ton net at the Works. If the prices which obtained at the time when the present Board took charge in April 1923 could be now secured, we should be laying by a sum of about Rs. 5 lakhs per annum after meeting depreciation charges. This phenomenal fall in prices has also affected the three iron industries on the Bengal side and all the world over. During 1925 the iron and steel industry passed through the worst depression known for half a century. Other similar concerns in India and many Works all over the world are in a similar predicament. A large number have been shut down temporarily. Many continue in operation because the Governments concerned are supporting them by granting subsidies, protective duties, etc. If the prices improve or the exchange becomes more favourable than has been the case in the past three years or if our subsidiary industries begin to pay, the profits from the Works will be appreciably increased. With the improvement of the receipts, a reserve may be maintained for the depreciation charges. When this stage arrives, the permanency of the Works will have been ensured.

The Present Position.

One point which is not remembered in the discussions is that engineering works of this magnitude require time to develop. They are not expected to pay the full dividend usually for 8 or 10 years after they are started and many do not pay any dividend for a long time. The experience of the three other undertakings in India has been the same. In the case of the Mysore undertaking, the time to judge will be after it has had sufficient time to train the requisite staff, stabilize its operations and build up its own market, and when the normal market conditions come to prevail.

As stated before, the Works in other respects are shaping well. The present position cannot be said to be unsatisfactory since we are able to balance receipts and expenditure at a time of great world trade depression. The future looks more hopeful, because till now the prices were falling and they have arrived at a stage when no further fall is held to be likely. Hitherto the value of stock had to be written down with declining prices, but this may not be necessary in future. A market for our products has been developed. The entire output of pig iron produced during the last half-year has been sold. We are confident of doing the same in the current half-year also. If things do not go very wrong, the Board are hopeful that they will be able to carry on the Works in future without further financial assistance from Government.

The manufacture of pig iron is an important basic industry, one which is the very foundation of our industrial civilization. It is hoped that the members of the public interested in the industrial development of the State will visit the Works, keep themselves informed of the true position of the affairs there and, if they are satisfied with its present working and its future prospects, give their wholehearted support to the undertaking.

Appendix.

Facts about the Works.

The Works consist of a charcoal blast furnace capable of producing about 57 tons of pig iron daily and wood distillation plant capable of producing calcium acetate, alcohol and wood tar. Ore is brought from the top of the Bababudan Hills by a self-acting ropeway, 3 miles long, and a tramway 24 miles in length. The entire length of tramway (2 feet gauge) in the service of the Works is 58 miles.

Work was sanctioned in ..	1917-18	
Agreement with The Tata Iron & Steel Co., Ltd., was ratified in ..	May 1918	
First estimate of cost of the project	Rs. 63.59	lakhs
Final estimate of cost of the project as originally sanctioned ..	„ 94.00	„
Estimate increased in 1922, owing to delay in construction, and for other reasons, to ..	„ 211.00	„
Prsent Board of Management formed in	April 1923	
Actual outlay incurred up to March 1923 as communicated by Government Departments	Rs. 167.00	lakhs.
Actual outlay incurred up to March 1926	„ 181.10	„
Expenditure incurred on subsidiary industries up to 31st March 1926	„ 5.75	„
Total loss incidental to starting the Works and operation till 31st December 1925 ..	„ 26.33	„
Of this, expenditure due to commitments during the construction period and the first half-year of operation was ..	„ 12.47	„
Expenditure due to writing down the value of stock on account of fall in prices	„ 5.16	„
Actual operation loss from 1st July 1923 to 31st December 1925	„ 8 70	„

Suggestions to a City Corporation.

By the Editor.

In our last issue, we published a summary of Sir M. Visvesvaraya's Report on the administration of the Karachi Municipality. There are certain features of the Report, which deserve special attention. Though the recommendations made are primarily intended for adoption by the Karachi Municipality, there is in them so much of value to City corporations in general that we make no apology for retailing them at some length here. Sir M. Visvesvaraya writes :—

The business of the Corporation is conducted by the President and that of the Committee, and Sub-Committees by the Chairmen who are usually appointed by the Committees concerned. The minutes are written up by the Chief Officer in the case of the meetings of the Corporation, the Managing Committee, and a number of Sub-Committees. The Corporation, generally, meet twice a week and hold in all about 70 meetings a year. In addition to the three Statutory Committees, it is suggested that two more may be appointed. *viz.*, a Public Works Committee and a Stores and Contracts Committee.

A Public Works Committee is needed to deal with the important services of Water Works and Drainage, Roads and Buildings. These services between them absorb about 43 per cent of the total expenditure of the Municipality. It should be understood that any work which does not specifically fall within the scope of the remaining four Committees will be attended to by the Managing Committee.

There are at present about 28 Subjects Sub-Committees. During the year 1922, the number of meetings held by such Sub-Committees was 233. The corresponding number in 1925 rose to 606.

The work of these Committees being heavy, it is desirable to appoint a separate Secretary for the purpose. The Secretary will collect information for the Committees from the departments concerned and communicate the resolutions and decisions of the Committees through the Chief Officer to the several departments for such action as may be necessary.

The appointment of the Secretary will relieve the Chief Officer and other Executive Officers of much of their routine duties and give them time to study the larger needs of the City and the more important Schemes of development and improvement, and generally to attend to matters requiring originality and initiative.

The cost of the new office of the Secretary and staff may be fixed at about Rs. 14,000 per annum.

It is important to have a very competent man for the Office of Secretary, otherwise the duties will be discharged in a routine and perfunctory manner. Unless a competent man is appointed there will be no real improvement.

CORRESPONDENCE AND RECORDS.

This section which is directly under the Chief Officer forms the Secretariat of the General Administration. The Chief Officer is responsible for assisting the President in recording the minutes of the business of the Corporation and of a number of Committees, and also for the finances and accounts

In addition, he holds supervising charge of the following four departments, each of which is under a separate head :—

(i) Assessment and Collection, (ii) Terminal Tax, (iii) Land, and (iv) Fire-Brigade.

The Stores Section is not at present directly under the Chief Officer, but with the appointment of the new Chief Store-keeper, it may be transferred to his control. As the head of the executive service of the Municipality, the Chief Officer is responsible in a general way for the efficient conduct of the work of all the remaining departments, *i.e.*, the municipal administration generally. He is assisted in the performance of these duties by the Deputy Chief Officer. A part of the staff consisting of two clerks and six peons may be transferred to work under the new Secretary who will also require a Stenographer. The services of the existing shorthand writer and general clerk will be utilized by the President and the Chief Officer.

It is necessary that the records should be centralized and the Head Record Clerk kept to his regular duties. The maintenance of records in an efficient condition and the work of destroying useless records should receive special consideration. All arrears of this character may be ordered to be brought up to date within a period of six months.

A nucleus of Statistical and Research Bureau should be opened as soon as possible.

The annual administration report which is prepared by this department is at present

very bulky without being informing. A mass of information, both important and unimportant, is recorded in it in a confused heap. One entry seriously made in the Report for 1924–25, perhaps for lack of better material, is an enumeration of the specimens collected for the museum!

It seems desirable to publish the report in a briefer form as is done, say, by the Rangoon Municipality, illustrated by graphs and charts where necessary. The reports of the departmental officers and all other details, which it is thought necessary to keep on permanent record, may be included in a separate compilation marked Volume II. The object of the Annual Administration Report should be to present the work of the Municipal administration during the year in a pithy and readable form so as to interest the average citizen.

ACCOUNTS AND AUDIT DEPARTMENT.

A general Balance Sheet should be prepared as is done in Commercial concerns. The more nearly the accounts of the Municipality approach those of a sound Commercial concern, the more efficient will be the administration of its finances.

The following suggestions may receive attention:—

(1) The Accounts Department is rather weak in technically trained staff. At least two men specially trained in Accounts and Commerce should be brought on the staff of the department.

(2) It is suggested that an engineering graduate be appointed as Check Auditor after giving him a training in Accounts. He should be available for checking quantities, measurements and bills of works in progress from time to time. The addition to the cost of the department on this account will be about Rs. 4,340 per annum.

A full explanatory statement should accompany the Budget at the time of its presentation to the Corporation for sanction; or the Chairman of the Managing Committee may introduce the Budget in the Corporation with an appropriate speech. This statement or speech should explain all obscure or doubtful points and place before the citizens a clear picture of the financial outlook and the policies to be followed.

There is no clear distinction maintained between expenditure from loans and expenditure from current revenues in respect of new works.

A number of other accounts are maintained but they are merely intended to explain details of the budget or to preserve records of individual or specific transactions or to give effect to the conventions appertaining to assignments of revenue to defined objects.

These conventions provide for the maintenance of separate accounts, that is, separate from the ordinary account, for (1) water works, (2) drainage extension, (3) land sales, and (4) new road construction. The water works contribute 20 per cent of their total revenue to the drainage extension account, and certain other estimated sums for water works renewal fund. We have seen that the sewage farm surplus revenues are credited to the drainage renewal fund. To the land sales account are credited proceeds of the land sold from year to year. Twenty-five per cent of the proceeds of general land sales is credited to new road construction fund. The amounts standing at the credit of the water works renewal fund and the drainage renewal fund at the end of 1924-25 amounted to Rs. 8.51 lakhs and Rs. 3.88 lakhs, respectively. Neither of these funds has been operated on at any time since their creation.

Credits and debits are made from one fund to another and from that again to a third. For example, a portion of the revenues from water works is credited to the drainage extension account; from the latter account again a portion is credited to the drainage renewal fund. The individual detailed accounts are clear, but there are no cross references given in all cases to show their relation to one another or to the ordinary account. There is no clear balance sheet given of the year's transactions. In the maze of details, one altogether misses such essential information, as the total income or expenditure of the year under the revenue or capital account. No rational financial forecast can be built upon such a confusing system as this. But these practices serve one good purpose, namely, they automatically provide funds for specified important municipal services and relieve the Corporation of the cares of adjusting expenditure to needs with every budget. But in sanctioning these practices sufficient consideration is not given to the unequal burdens thrown on the present generation in order to build up property the benefits of which are shared equally or in greater measure by posterity.

The correct modern method is to finance large new works such as water works or drainage extension works by loans and to debit to the services in the revenue account the

loan charges, *i.e.*, the interest and sinking fund payable on the loans from year to year.

REFORMS IN SYSTEMS OF ACCOUNTS.

In order to convey a clear idea of the policies embodied in the Municipal Budget and accounts, the following reforms are recommended in conformity with modern practice.

The chief want is a statement or abstract giving a comprehensive view of all the transactions for the year. If this statement is prepared, all transactions appearing under the various accounts, now seemingly unconnected, will be exhibited in clear relation to one another and to the total amounts in the budget as well as the actual balances for the year. This is the most important reform needed.

Among the subsidiary reforms may be mentioned the following :-

(1) As far as possible the accounts of new public works should be kept distinct from those of the administration, operation and maintenance of the ordinary Municipal works and services. This will lead to a clearer comprehension of the financial responsibility involved in each case.

(2) In view of the large expenditure incurred on capital account works, a capital account budget may be maintained as distinct from the ordinary revenue budget. The capital account will show clearly what amount has been expended on large new works, how much of it is from loans, what the capital receipts consist of and whether there are any direct contributions to it from the revenue account and, if so, how much during the year. At present some of the capital expenditure is directly charged to the revenue and the record of such expenditure is liable to be lost.

(3) The capital account budget will not include ordinary or new minor works and additions or major repairs to existing buildings, markets, roads, etc. For this class of works, provision may be made in the revenue budget (ordinary account) for an expenditure of Rs. 1½ to 2 lakhs every year, etc., etc.

Municipal Savings Banks.

By A. Emil Davies,

Chairman of the Financial Committee of the London County Council.

The disastrous effects of the post-war depression and the consequent increase of taxation have left people in all parts of the world very much poorer than they were a few years ago. It is obvious, therefore, that private investors who have hitherto provided the capital required for development purposes by local authorities cannot now be relied upon to furnish the requisite sums. At the same time, there is one great reservoir which has not been fully tapped ; it is that of the common people. It is a big reservoir, though a shallow one in the sense that the individual amounts available are small, and the difficulty that has been encountered by people who have tried to utilize this source of capital has been that the cost of collection has usually neutralized the advantages gained.

To a certain extent, so far as Great Britain is concerned, the problem has been tackled by the National Savings Certificate movement, but it has been left to the Birmingham Municipal Bank to show how cheaply and profitably it can be done on a local scale. The Birmingham Municipal Bank is the only institution of its kind in Britain, but, at the same time, it shows a remarkable record of prosperity. On the Continent there are many very successful Municipal Savings Banks. There is, however, still a great deal of room for further expansion, both at home and abroad.

The Birmingham concern had its origin in a Municipal Savings Bank established by the Corporation in 1916 principally to facilitate the investment of savings in War stocks. Under the original statutes depositors were limited to employed persons ; the method of saving was restricted to deductions from wages; withdrawals without notice were limited to £1 and the Corporation could only invest its funds with the National Debt Commissioners. Yet, in spite of these restrictions the Bank met with such a degree of success that it found that it had no less than 30,000 depositors with £350,000 standing to their credit after the first three years' working.

This was sufficient to indicate the enormous capital resources of the working classes, and the Birmingham Corporation accordingly applied to Parliament for further powers and in 1919 obtained official sanction for the establishment of the bank in its present form. It has three objects : (*a*) to receive deposits and to guarantee the payment of interest on them ;

(*b*) to advance money to depositors for local house-purchase, and (*c*) to utilize and invest its funds in municipal works, etc. Any sum from 1*d.* up to a yearly limit of £500 is received on deposit from individuals, and the interest rate, which has to be approved by the Treasury, cannot be varied except on 3 months' notice to depositors. Hitherto the rate has been 3½. Withdrawals are limited to £30 in any one week. This system has proved itself an entirely practicable one, for whereas in 1920 deposits totalled £746,984, in 1925 they had grown to £4,611,553. The working expenses in 1924–25 were only about 0.9 per cent of the difference between the amount of deposits at the beginning and end of the year; interest paid on deposits worked out at 3.2 per cent; while the rate of interest earned on deposits was actually 4.3 per cent, thus leaving a small margin of profit.

The figures make it plain, too, that the Municipal Bank does confer benefits upon the public in addition to the advantages which the Corporation itself derives. I shall be told, of course, that it would be dangerous for a Municipality to employ too large a proportion of the deposits for its own purposes. Obviously, a proportion must be kept liquid, but, as with the ordinary banks experience shows what amount is sufficient for this purpose. Moreover, it would be possible for advances to be made to other local bodies, while the Corporation itself which guarantees the safety of deposits, could hold Government or other securities to yield it, say, 4½ to 5 per cent whilst paying its depositors 3 or 3½ per cent. In case of emergency it could realize these holdings or borrow against their security.

If it is said that in the last resort they would have to have recourse to their bankers, that is quite correct, and is just as true as the statement that in the last resort those bankers themselves would have to have recourse to the National Bank such as the Bank of England, and the Government.

The point to bear in mind is that a Municipality, by guaranteeing absolute safety and by giving easy facilities for deposit and withdrawal of small sums, can mobilize a large amount of capital which would otherwise be unproductive, making the operation pay for itself and show a small profit, while at the same time stimulating thrift. The Birmingham figures are particularly striking in one respect, for they show that although withdrawals naturally increase as the amounts deposited increase, the preponderance of deposits over withdrawals augments itself from year to year. For instance, the surplus in 1921 was £658,994; in 1922, £163,518; in 1923, £1,014,346; in 1924 £1,359,599 and in 1925, £1,367,992.

Japan and India.

By The Japan Cotton Spinners' Association.

[*Not long ago we published in these pages, the Indian and British views on the competition of Japan with India in the Cotton Trade. The following Statement concerning "The Indian Misunderstanding", as they term it, of the Japanese Cotton Spinning Industry has been issued by the Japan Cotton Spinners' Association and sent to us for publication:*]

Very much has been heard recently of rumours which have been wildly spread in India, regarding the cotton spinning industry of Japan, and the various steps contemplated in the tariff policy of India for the purpose of discriminating against Japan and preventing the importation of Japanese cotton yarn and piece-goods. Such rumours are quite unfounded, and in view of the trade relationship between India and Japan, a relationship which has of late years been steadily growing stronger, the circulation with its resultant agitation, is a matter to be highly regretted.

The agitation has been conducted for some time but appears to have become gradually more heated. One of the reasons that may be advanced is that the Indian cotton spinners want the excise duty on the domestic cotton manufactures abolished. This duty is, however, an entirely Indian affair, and it is not within our province to discuss thereon, as the circumstances and reasons which led to the establishment of the excise duty in India, had no relation whatever with the Japanese cotton industries. We trust, therefore, that the reader will keep in mind that this statement is in no way intended to express opinion on the abolishment of the cotton excise duty in India.

Under date of December 30th, 1921, we had

the honour to submit to the Secretary of Finance, the Secretary of Commerce and the Indian Fiscal Committee, a statement concerning the unfounded rumours relating to the cotton spinning industry of Japan which were prevalent at that time, with the object of dispelling misapprehensions concerning the so-called unfair competition of Japan.

It was then seen that if an increase in the existing Indian tariff be made, and a preferential tariff adopted, a serious blow would be dealt not only to the cotton spinning industry of Japan, but also to the development of the general trade relationship between the two countries. Such a disaster is not desired by either India or Japan—indeed, the consequences were discerned beforehead, and the purport of the statement was to prevent unhappy issues being realized.

In the meantime, tariff reform has continued to attract general attention in India. The cotton spinning interests, while agitating for the abolition of the excise duty, have also agitated for an increase in the import duty on cotton yarn and piece-goods, and the cotton spinners in advocating this measure have always made it a point to advance the theory of unfair competition from the Japanese similar interests.

If the conditions of the cotton spinning industry of Japan be somewhat misunderstood in connection with the agitation for abolition of the excise duty in India, only, the misunderstanding could be tolerated, but when there is a danger of perceptions which may lead to the establishment of a discriminatory tariff operating against Japanese cotton goods, the removal of the misunderstanding is vitally requisite in the interests not only of the cotton spinning industry of Japan, but also in the interests of the economic welfare of the two nations. It is for this reason that this statement in the form of a supplement to the previous one of 1921 is submitted.

Rebate of Freight on Indian Cotton.

A misunderstanding which has been spread in India for several years past was that the rebates which the cotton spinning companies of Japan received from the N.Y.K. and other steamship companies in accordance with agreements made between them regarding the transportation of the raw cotton from India to Japan, were bounties granted to the cotton spinning companies by the Japanese Government.

This misunderstanding was explained away in our statement of 1921 wherein the history of the freight agreements was fully enlarged upon, and it was made abundantly clear that the Japanese Government had nothing whatever to do with the rebates either directly or indirectly—it being a matter for the shipping companies alone.

It is not, therefore, necessary to go into a detailed explanation of the above agreements now, but a short review may be advisable. Briefly speaking, the agreements were entered into between the Japan Cotton Spinners' Association on the one hand, and the N.Y.K., O.S.K. and the P. & O. Steamship Companies on the other hand. Before the European War, the Austrian Lloyd, Societa Nazionale di Seruisi Maritimi and the Messageries Maritime were in conference. These foreign steamship companies have paid the rebates to the cotton spinning companies of Japan in just the same way as the Japanese steamship companies have done. This fact, we submit, should alone show that the Japanese Government had nothing to do with the matter of rebates.

Again, towards the close of last year and at the suggestion of the spinning companies conducted by the Japanese in China, similar freight agreements were entered into between the Chinese, Indian, British and Japanese cotton spinning companies as well as many cotton dealers of various nationalities at Shanghai on the one part, and the steamship companies on the other part, to the entire satisfaction of all. We submit this as another proof of the non-participation by the Japanese Government in the question of freight rebates.

The Times Trade and Engineering Supplement, in their issue of January 9th of this year, reported as follows:—

"Japan is now trying by indirect means, to paralyze the Chinese as well as the Indian cotton industry. The Osaka spinners have a fleet of steamers which carry raw cotton from Bombay to Japan and bring back manufactured goods to India. A fiat has been sent here by the Japanese steamship monopolists that the freight to Shanghai is to be increased and that the allocation of Indian cotton to China on board their vessels is to be dependent on the discretion of the local agent. The real meaning of this fiat is quite intelligible. This enhancement of freight to China is for no other purpose than to make Indian cotton dearer in that country, while the steamers carry any quantity to Japan at specially low freights. In this way the cotton industry in China is to be hampered, and Japan is to be in the better position to

compete at cutting prices with the Indian Industry."

A more erroneous report could hardly have been made, and it is a matter for extreme regret that such words should have appeared in print, let alone under the auspices of the "Times".

As a matter of fact before the Indian Cotton Importers' Association of China entered into their recent agreement with N.Y.K., P. & O. and O. S. K., the actual India-China rate was Rs. 22½ net—a rebate of Rs. 5 being allowed on the current rate of Rs. 27½ but by the agreement previously referred to, this rate was further reduced to Rs. 15. In other words, in addition to the former ordinary rebate of Rs. 5, an additional special rebate of Rs. 7½ was granted. The rate was thus not raised as the "Times" reports, but on the contrary it was lowered by Rs. 7½. Surely this would not lead to the paralysis of the Indian cotton industry as alleged by the "Times".

Certainly, the India-China rate has been somewhat higher than the India Japan rate for some years past, and the Association, when they arranged the freight contracts above referred to, used their utmost effort to reduce the India-China rate to the level of the India-Japan rate, but unfortunately, the effort was not successful, solely because Shanghai, as a cotton importing port was, and is not now, in the same position as the Japanese ports. There is a great difference between the two places in the amount of cargo carried annually; the average amount carried per vessel for Shanghai being usually estimated at 5,000 bales while that for Japan at 25,000 bales. Moreover the tonnage dues charged on the cargo to the steamship companies are, in Shanghai, 40 cents per ton, whereas the dues charged in Japan only amount to 5 cents per ton. Also Shanghai is subject to the cost of pilotage, which is not necessary in Japan. This was the chief reason why the rate was finally fixed at Rs. 15, showing as above referred to, how, by this recent freight agreement, the difference in the rates between the two routes was considerably reduced.

The China Association has from the first aimed at equalizing the benefits accruing to the cotton spinning companies conducted by the different nationalities in China, as may be seen from a passage in the address delivered by Mr. Fusazo Taniguchi, Chairman of the Committee of the Association, at the Inaugural Meeting. The passage runs as follows:—

"In spite of this tendency importers uptil now did not seem to have made any efforts to reduce the expenses of transportation. The freight and sailing had been entirely left in the hands of the shipping companies. The consequence has been that the rate of freight for China has always been very high. This unsatisfactory position seems to have been the result of either Mills or Merchants not making a joint effort, but acting independently of one another. In order to adjust this unsatisfactory state of affairs we have been making very great efforts with the Nippon Yusen Kaisha, P. & O. S. N. Co. and the Osaka Shosen Kaisha who have been maintaining regular services between India and China, and have been able to obtain a very substantial reduction in the rates of freight between these two countries.

Such being the spirit prompting the organization of this Association, every member will be placed on equal footing and receive equal fair treatment without regard to nationality or the size of business. Upon establishment of this Association, the mutual interests of the members will be greatly enhanced in all matters."

It may be added here that the India-China freight agreement was entered into between the entire group of the cotton spinning companies conducted by the different nationalities in Shanghai, and the steamship companies, and that the Japan Cotton Spinners' Association had nothing to do with it.

As the rumour spread in India that the N.Y.K. receives bounties from the Japanese Government for the India-Japan service, it is sufficient to say that the bounties were entirely abolished in 1906. The money which the Government now gives to the company is simply compensation for carrying mail matter, and does not even possess the nature of bounty. Incidentally the O.S.K. elected not to accept this service because of the small compensation payable.

CONVENTION CONCERNING HOURS OF LABOUR.

There are some arguments advanced in India that since Japan has not yet ratified the Convention concerning the hours of labour as adopted by the First International Labour Conference held in Washington, the Indian industry in which the Convention is put into operation, has naturally felt the pressure of the presumed Japanese advantage. Those who advance these arguments are mostly the cotton spinners of India: they seem to contend that the cotton spinning industry of the country has received a serious blow from the non-ratification of the Convention on the part of Japan. It is here necessary to point out that

there are many misunderstandings entertained in India regarding this point.

The circumstances preventing the ratification of the Convention in Japan are many and varied, and a detailed explanation of them is impracticable. Suffice it to say that Japan has never neglected the conventions and recommendations adopted by the Washington Conference, but is doing her best to have them carried into effect according as the circumstances of the country allow—a fact which can be substantiated from the revision of the factory law which was passed by the Imperial Japanese Diet in 1923, and also from the remarkable improvement of the conditions of labour in recent years.

With regard to actual ratification of the Convention, Japan does not stand alone, for only five countries have ratified, *viz.*, Bulgaria, Czecho-Slovakia, India, Greece and Rumania, and in view of this fact it is not proper for India to blame Japan alone for non-ratification.

Because India and Japan were placed in the list of special countries in the First International Labour Conference, some persons in India appear to entertain an idea that there was some kind of understanding whereby the hours of labour of one country were made conditional upon the hours of labour of the other, when the convention for hours of labour for the two countries was adopted, but this is a mistake. The hours of labour for India were determined by consideration of the conditions in India only, and the hours of labour for Japan were determined by consideration of the conditions prevailing in Japan. Indeed, at the committee meeting held to consider the hours of labour for the special countries, no reference was made to the relations between India and Japan. If, therefore, there exists any kind of relationship between the two countries from the point of view of comparison, such relationship must also exist between India and the European countries. In short, the relativity was a general one among the countries represented at the Conference and not a special one between India and Japan. If India is justified in reproaching Japan for not ratifying the Convention, she should also reproach such European countries as have not ratified them.

We know the critics in India do not intend to argue on legal grounds, and we think that, because Japan has not yet ratified, they fear that a disparity between the labour conditions of the two countries has arisen, which affects the comparative market prices of cotton manufactures.

The hours of labour in the cotton spinning industry in Japan are not eleven per day as alleged in India, for since 1923 the principle of the ten-hour day has been observed, except in a very few instances and therefore in this respect, there is practically no difference between the working hours of Japan and India

We were informed that a certain influential man in India reported to the Indian Government that Japan was employing 11-year old hands for hard work and for no wages but only for food and clothing. Such criticism is, however, quite irresponsible, for according to the factory law now in force in Japan, the hands to be employed in factories are limited to those who are beyond 12 years of age. Further it is anticipated that a revised factory law will be enforced this year whereby the minimum age of minors will be raised to 14. Even at present, the number of minors below 14 years of age must be very insignificant—in fact there may not be any, and to say that wages are not paid to the minor hands is virtually an error born of the lack of common sense.

Wages for Workers.

The view is apparently entertained in India that the wages paid by the cotton spinning companies in Japan are lower than those paid in India, but this is the very opposite of fact. Recent figures are not available as to the wages paid by the cotton spinning companies in India, but according to the statistical report of the Labour Office of the Government of Bombay issued last year, the general average rate of wages paid by 186 cotton spinners in Bombay in August 1923 was Rs. 32-1-0 per head per month—the number of working days per month being taken as 27.

By way of comparison it was found that the wages paid by the cotton spinning companies of Japan in the same month of the same year, and also taking the number of days worked per month as being the same were 33.53 Yens per month. Reduced in terms of the Rupee at the rate of Rs. 155 per 100 Yens which was the average exchange rate of that year, the Japanese wages would amount to Rs. 52-4-0. Thus the Japanese wages were higher by more than 60 per cent.

Moreover, the amount of expenses for erecting and maintaining dormitories for workers in Japan is considerable. In addition there are other items of burden such as the half-yearly bonus to the workers, and the expense of enrolling and training them, as well as the retiring allowances. All these expenses have

risen enormously of late years owing to the general rise in prices, which in Japan has been much higher than in other parts of the World. It will thus readily be seen, that the Japanese cotton spinning industry has to carry a burden which is not comparable with that of Indian mills.

QUESTIONS OF 20 HOURS OF OPERATION.

Another erroneous view entertained in India is that since the Japanese cotton spinning factories operate 22 hours per day, working day and night, whereas the Indian factories operate only 10 hours per day, India will not be able to compete with Japan. The hours of operation in the Japanese cotton spinning factories are, however, not 22 but 20 divided into two shifts of 10 hours each. The reference made in a statement addressed under date of February 8th, 1924, to the Indian Government by the Millowners' Association of Bombay, that the Japanese cotton spinning factories are operated from 22 to 24 hours per day was an exaggeration based upon misinformation. That long hours of operation will affect the cost of production of cotton yarn and piece-goods must be admitted, at least to a certain degree, but one must not overlook the fact that a much larger amount of capital is needed in the cotton spinning industry of Japan- a point which will be fully explained below. A fair-minded observer has said that about twice as much capital is invested in the Japanese cotton factories as in the British, per spindle, and that the double-shift system of Japan was brought about as an absolute necessity.

In this connection the report of the United States Tariff Commission, issued in 1921, may be noted. It says *inter alia* that the cost of erecting and equipping mills in Great Britain is 32 dollars per spindle; in America 40 dollars, and in Japan 60 dollars. The report also contains the following passage:—

"The amount of investment required per spindle operated has, therefore, been relatively much higher than in the United States.....In order to overcome this handicap, every effort has been made to obtain the largest possible output from the expensive plant and equipment. This is strikingly evinced by the fact that the Japanese spinning mills have, almost since their inception, been operated night and day, employing two 12-hour shifts for an average of 27 days per month."

Reference has previously been made to the subject of maintaining dormitories. This has to be done by most of the millowners because under the double-shift system of a factory it becomes a practical necessity. The expenses in connection therewith are large, and include provision for the comfort amusement and care of the workers.

It is also contended that the double-shift system does not double the amount of production, and consequently the effect of the system upon the cost of production of cotton yarn and piece-goods is not so great as outsiders may imagine.

Let the economic effect of long hours of operation be as it may, attention is specifically drawn to the fact that the revised factory law which will probably take effect from this year, expressly provides that three years after the law commences to operate, the night work for women and minors shall be prohibited and therefore such night work in the cotton spinning factories of Japan will be abolished at the latest, within three or four years from now. The reason why three years of grace have been provided for is self-explanatory to all having a knowledge of factory management.

Referring to the subject of the age limits it is important to note that whereas the factory law of India provides that the minimum age of workers to be employed in the factories, shall be 12 and the maximum age of minors shall be 15, the revised factory law of Japan provides that the minimum age of workers shall be 11, except in special cases, and the maximum age of minors shall be 16. Again, since the night work for women and minors is to be abolished about three years hence, the phrase "sweated labour" as used in India is rather misplaced when applied to the Japanese factory workers. Also in ascertaining the age of workers, the Indian factory law simply depends upon the judgment of the certifying surgeons. Such a method may be unavoidable in India where the family registry system is imperfect and the standard of education of workers is comparatively low, and where many do not know their own age. One cannot help doubting whether the true object of the factory law is attained under such a system.

BURDEN OF TAXES.

The Statement addressed to the Indian Government by the Millowners' Association of Bombay, and dated February 8th, 1924, says that the tax burden on the cotton spinning companies of Japan is lighter than the tax burden on the Indian mills. Since however, that statement was sent for the purpose of

emphasizing the need for abolishing the excise duty on domestic products, we believe that the issue thus raised will naturally disappear on the abolition of the excise duty.

The greater portion of the taxes imposed upon the Indian cotton spinning industry is the excise duty amounting to Rs. 20,000,000 annually. Besides this the industry must bear the burden of income-tax, super-tax, import duties on machinery, dyestuffs and sundries needed for cotton spinning, as well as the town duties of Rs. 1-4-0 per bale on all cotton brought into Bombay. There may be some other taxes, but all taxes added together will prove to be small if compared with the excise duty.

Under such circumstances we think that no issue should be raised on this point, since the tax burden on Indian cotton spinners after the abolition of the excise duty, will be very smaller than the tax burden borne by the Japanese spinners.

Alleged Low Rate of Interest.

It is alleged in India that the cotton spinning companies of Japan are receiving State aid in the form of loans at low rates of interest. This allegation is just as unfounded as the one concerning freight bounties. Certainly if there is any fact to prove the allegation we have yet to learn of it.

Also it is said that the Industrial Bank of Japan supplies low interest capital to the cotton spinning companies and that the Japanese raw cotton merchants abroad are financed by that bank in a similar manner. As a matter of fact, nearly all of the cotton spinning companies of Japan possess a large amount of floating capital they have appreciable credit balances with their bankers, and generally maintain quite a firm standing. They rarely borrow money from any bank whether at a high or low rate of interest, and even if a few of the companies did require money on loan, no bank would be willing to lend at a lower rate of interest than the current rate of the day. There is not a Japanese cotton spinning company which has as yet borrowed capital from the Industrial Bank of Japan, and neither has there been an instance of Japanese merchants abroad borrowing capital from the Bank. Even the Yokohama Specie Bank and the Bank of Taiwan which have the closest financial relations with the Japanese cotton merchants as well as with the cotton yarn and piece-goods merchants, have never yet been known to finance the merchants with loans at specially low rates of interest. The above two banks conduct their business in Bombay side by side with the Sumitomo Bank which is beyond all suspicion of such financial dealings.

We deem it necessary to add here for the information of the critics in India, that Japan is placed in a far more disadvantageous position financially. The Japanese cotton merchants must reckon two months as the time required in which to make delivery of the goods bought in Bombay to the spinning companies, for in addition to the usual number of days needed for navigation, there is often the inconvenience of securing bottom, and distribution difficulties are often experienced after the arrival of the goods in the Japanese ports. Thus, because Japan is far removed from the place of production and the consequent time required for delivery is considerable, the spinning companies of Japan are obliged to maintain a certain amount of stock of raw cotton, with which to meet emergencies, and unexpected requirements for mixing purposes. Under such circumstances the Japanese spinning companies have to pay interest on money paid for stocks of raw cotton for at least three months—a charge which the Indian cotton spinners are not subject to. We certainly think that if these circumstances had been carefully considered by the critics in India, they would not have taken up the question of low rates of interest, with respect to Japanese competition.

Future Handicap for the Cotton Spinning Industry of Japan.

We have seen that subsequent to the European War, Japan has been subjected to an extraordinary rise in the general prices of commodities. According to the report of the Bank of Japan, the index numbers for June 1925, on the basis of the original index numbers for July 1914, were in Tokyo 210, in London 169.6 and in New York 157.3 while statistics of the Labour Office at Bombay show the index number to be 160. Moreover, due to the great increase in population and the general development of industry in Japan, the available land adjoining the larger cities has soared in value. It is because of these circumstances that the cost of establishing cotton spinning factories has continued to increase year by year. For example in the neighbourhood of Osaka, the cost of establishment per spindle has, during the past two years, risen from 150 Yens to 200 Yens. It is only to be expected that as the number of mills increases in the future, so the average cost of establishment will also tend to increase. The cost of

labour, too, has a sharp tendency to rise—more so than in other countries.

Since Japan has no source of supply of raw cotton in her own territory, and as the cost of establishing factories is especially high, she is even now greatly handicapped in her competition with other countries. Indeed, as the future tendency is such as we have reviewed, the competitive power of the cotton spinning industry of Japan should be regarded as likely to decline.

Indian Imports of Japanese Cotton Yarn and Piece-Goods.

Although it is a fact that a certain amount of Japanese cotton yarn and piece-goods has continued to be imported by India since the European War, the amount has been insignificant as compared with the total amount of consumption of the goods in India. Within five years up to 1924, inclusive, the average has not exceeded 3.8 per cent in cotton piece-goods and 2.4 per cent in cotton yarn. Moreover, in India there is a large amount of hand-woven cotton piece-goods as well as machine-made goods. If the hand-woven goods are counted, the imports of Japanese goods will become still more insignificant. Again whereas the amount of Japanese cotton piece-goods imported into India was largest in the fiscal year of 1918–19, receding fluctuatingly in later years, the amount of British cotton piece-goods imported, and of the production in India has increased.

At any rate, any policy to suddenly bring a pressure to bear upon Japanese goods, where the amount of imports is so small must be said to be a short-sighted one. Unless India wants to discontinue the India-Japan trade relations, such policy would certainly not be a proper one for her to adopt. The following statistics which are compiled from the Annual Statement of the Sea-borne Trade of British India, 1924 and the Report of the Bombay Cotton Millowners' Association, 1924, will reveal the insignificance of the imports from Japan:—

COTTON FABRICS.

(Imports from Great Britain and Japan, and Production in India.)

	Japan	% to Total	Great Britain	% to Total	Indian Production	% to Total	Total
		(Unit 1,000	Yards)				
1919-20	75,853	2.8	976,127	36.3	1,639,779	60.9	2,691,859
1920-21	170,339	5.6	1,291,763	42.4	1,580,849	52.0	3,042,951
1921-22	90,275	3.3	955,099	34.4	1,731,573	62.3	2,776,947
1922-23	107,778	3.3	1,453,408	44.2	1,725,284	52.5	3,286,470
1923-24	122,666	3.9	1,318,804	42.0	1,700,397	54.1	3,141,867
Average	..	3.8	..	39.9	..	56.3	..

COTTON YARN.

(Imports from Great Britain and Japan, and Production in India.)

	Japan	% to Total	Great Britain	% to Total	Indian Production	% to Total	Total
		(Unit 1,000	Yards)				
1919-20	1,917	0.3	12,229	1.9	635,760	97.8	619,90
1920-21	20,122	2.9	23,395	3.3	660,002	93.8	703,519
1921-22	14,915	2.0	40,074	5.3	693,571	92.7	748,560
1922-23	26,546	3.5	31,018	4.1	705,893	92.4	763,457
1923-24	20,430	3.1	21,789	3.4	608,627	93.5	650,846
Average	..	2.4	..	3.6	..	94.0	..

The cotton spinners of India have been lately complaining of the business depression. The Japanese spinners, too, have not escaped the blow from the depression after the European War. Generally speaking, however, the number of spindles in India has increased by 1,500,000 and looms by 33,000 so that the Indian industry has not at all declined. The cotton spinning industry in Japan, to be sure, has developed more speedily than in India, but the point should not be lost sight of that a young country (speaking from the industrial point of view) will naturally progress with a rapid pace as compared with an advanced country. This is unavoidable. For example, the cotton spinning industry in China has been making a more rapid progress than in Japan, but just because of this fact, Japan by no means entertains jealousy towards China, and if India, who is longer-established in the cotton industry, could understand Japan's position a little better, she would entertain no ill-feeling towards Japan.

If the fear entertained by the cotton spinners of India, that India will be eventually overcome by Japanese competition, be at all likely to be realized, then the actual cause thereof must be studied, but in doing so it would be impossible for India to arrive at a fair and just conclusion, were she to put the blame upon other countries only. Frankly speaking, it would appear that the Japanese people are progressive while the Indian people are conservative—a fact which seriously affects the progress of Indian industry in comparison with Japan. Such observation may not be wide of the mark, for to take an instance, there is room for serious study on the part of India whether the so-called agent system which has long hampered the cotton spinning industry in India, could not be improved. What we earnestly desire is, that the cotton spinners of India should study the relative industrial conditions of the two countries with an unbiassed mind.

Present Condition of the India-Japan Trade.

Next we have to call your attention to the increasing trade relations between the two countries. The amount of trade has enormously increased, *viz.*, from 186,500,000 Yens in 1914 to 523,000,000 Yens in 1924—a fact upon which the two nations are to be congratulated.

The chief factor in this event has been the increase of exports from India to Japan in a true progressive manner. The exports to Japan have annually greatly exceeded the imports from Japan, and indeed, from the Japanese point of view, India to-day stands foremost in the countries whose exports to Japan exceed the imports.

The following table will show the trend of development of the India-Japan trade:—

	Imports from Japan	Exports to Japan	Total	Excess of Exports over Imports
	(Unit 1,000 Yens.)			
1909 ..	14,426	65,157	79,583	50,731
1914 ..	26,048	160,324	186,372	134,276
1919 ..	116,878	319,477	436,355	202,599
1924 ..	135,373	387,791	523,164	252,418

To analyse more concretely, Japan chiefly imports raw cotton from India and exports to India various kinds of commodities, including a small amount of cotton yarn and piece-goods. The raw cotton which Japan imports from India amounts to nearly one-half of the total exports of Indian raw cotton. The cotton yarn and piece-goods exported from Japan to India amount to only 3% of the total consumption of such goods in India. Surely it is not wise for India to forget the fundamental principle of mutual benefit and to brood over the issue of hindering imports of cotton goods. The result of hampering the importation of goods from Japan by a tariff policy would naturally lead to the hindrance of the export of raw cotton; not only this but also of the exports of grain, iron, hides, lac, manure and jute, the value of which is considerable.

Also would it be right to sacrifice the interests of the general consumers in India, solely for the benefit of the cotton spinners, by hindering the importation of Japanese goods and forcing high-priced cotton yarn and piece-goods upon them, despite the fact that there are some kinds of Japanese cotton manufactures which are cheaper than those made in India? Straightforwardly speaking there is certainly room for the intelligent classes of India to carefully consider whether the development of the cotton spinning industry can really be brought about by a policy of raising the tariff rate on imports of cotton manufactures, having regard to the likelihood that the protective tariff tends, in India, to mere contentment, rather than to improvement in the management of the mills.

Export Duty on Raw Cotton.

The question of export duty on raw cotton has already been exhaustively discussed in India, and public opinion appears to be opposed to this duty. It would, therefore, be useless to refer to it in detail, and to say that the duty is entirely different in nature from the export duty on jute which was for the first time imposed in 1916, and that the burden of the duty falls upon the cotton growers of India. The cotton spinners who advocate the cotton export duty have in mind, that the duty will act as an indirect tax imposed upon the cotton yarn and piece-goods imported from Japan. Since, however, the Indian raw cotton re-imported in the form of manufactures is only a very small portion of the total exports of Indian raw cotton to Japan, the gain for the Indian cotton spinners from the duty, if there be any, will not be sufficient to make up for the loss sustained by the cotton growers in India. Granted that the burden of the duty will be borne by the Japanese cotton spinners and not by the Indian cotton growers, the ultimate result will be that the general consumers of the cotton goods in Japan will bear the burden. This, we fear, may cause ill-feeling towards India on the part of

the Japanese public, but if not actually this, the consumption of Indian raw cotton in Japanese mills will be curtailed.

Our Expectations.

We have so far discussed the problem at issue from various points of view. Our expectations are simple. All we want is that the Indian cotton spinners and other interested parties should study the conditions of the cotton spinning industry in India and Japan, and compare the two countries in a most fair-minded spirit, and take proper steps based upon a fair decision. In other words, we trust that they will place the Indian tariff policy upon an equitable basis, in order to further the trade between the two countries.

The Imperial Japanese Diet in session is now deliberating upon the tariff reform, with the object of revising the tariff law of 1911. Since that year, there have been striking changes in price levels and industrial conditions in all countries, and although the European and American countries have strongly tended towards a protective policy to meet the situation, Japan is now limiting her policy of protection to only essential parts. The increase of import duties on pig-iron, for instance, is quite consistent with the national policy, and there has been a strong advocacy to protect the iron industry by means of a tariff. The Japanese Government, however, is resisting the movement to increase the pig-iron duties because of the effect such step would have upon the countries from whom pig-iron is imported. In this connection we may add that the spinners are opposing the raising of these import duties.

If India raises the import duties indiscriminately for all foreign countries as a matter of financial necessity, and after justly considering the actual circumstances of Japan, we shall have no complaint to make. If, on the other hand, India should take a discriminatory attitude towards Japan based upon false and exaggerated reports, such policy will certainly be to contravene the principles of fair trade. It would hamper the progress of trade between the two countries, to the economic loss of the two peoples, and give a tendency to loosen those bonds of friendship which have tightened so strongly in recent years.

We, therefore, earnestly entreat you to give your careful consideration to the tariff policy now at issue.

Unemployment among the Middle Classes.

By Sir P. S. Sivaswami Iyer. *

I gave notice of a Resolution in these terms more than a year ago, and as it has not been my good fortune to draw this Resolution at the ballot, I have been obliged to move my Resolution in the shape of this amendment. Now, Sir, as regards the scope of this Resolution, let me point out first that, while I do not ignore the general problem of unemployment of labour, this Resolution is not meant to raise that question. It is meant to raise the somewhat more limited but nonetheless acute problem of unemployment among the educated classes. As regards the general problem, it may be dependent upon various temporary causes, such as seasonal fluctuations, trade cycles, and so on. But as regards the problem of unemployment of the educated classes, it is due, I believe, to much deeper causes, causes not of a temporary character. It is largely due to a lack of adjustment between the system of education now in force in the country and the needs of industrial progress.

As to the existence of this evil I do not think that any proof is required. Everyone who is acquainted with the conditions of this country is aware how widespread and how acute this problem is among the educated classes. It has attracted the attention of some of the Provincial Governments and it has attracted the attention of the public in some at least of the Provinces. For instance, in Bengal a Committee was appointed in 1922 to inquire into the question of unemployment, and this Committee under the Chairmanship of Dr. Meek has presented an excellent and very valuable report on the subject, a report which contains many suggestions which it is desirable to have carried out. In Bengal the question has also engaged the attention of the University and of the late Vice-Chancellor, Sir Ashutosh Mukherji. There is an Indian Polytechnic Institute founded by the Maharaja of Cossimbazar and the Principal of that institution, Captain Petavel, has been carrying on propaganda in this direction, for the purpose of making education self-supporting and

* Speech in the Legislative Assembly.

for the purpose of reducing the problem of unemployment among the educated classes. I understand also that in the province of Madras a Committee has just been appointed to inquire into this question.

The problem now before us is this. Are these local and separate efforts on the part of one or two provinces sufficient to deal with this problem? The first question is, are you satisfied with regard to the existence of this evil? I have no doubt that there can be no difference of opinion on that point. The problem requires to be considered with every sympathy and has to be grappled with in earnestness and by continuous effort. It may perhaps be said that this is a problem which has to be dealt with by the provinces and not by the Central Government as Education and Industries are provincial subjects and not Central subjects. It is, of course, true that Education and Industries are provincial subjects, but I believe that that does not prevent the Central Government from making investigations into a question like this, from trying to find out what the present situation is, what the causes are and what the true remedies are and by whom they ought to be tackled. It is a problem, I realize, of very great magnitude. Conditions vary in the different provinces. It may perhaps be said that the problem is not acute in all the provinces. I do not know. Speaking for Madras and I think, speaking from second-hand knowledge of Bengal, the problem is certainly extremely acute in these two provinces. That the problem exists in an acute shape in the other Provinces also is my belief. If it does not, I dare say the spokesmen of those Provinces will say whether the problem exists in those Provinces or not. Now, having regard to these facts, the widespread extent of the problem and the extremely complex character of it, impinging as it does upon a number of questions connected with our educational system, with our economic condition and our social conditions, the problem requires to be dealt with in a comprehensive way by a co-ordinated effort and by such machinery as the Central Government alone can command.

With regard to the technical objection that it is a provincial subject and not one to be dealt with by the Central Government, I would ask the Government to follow the excellent example which has been recently set of the appointment of a Royal Commission on Agriculture. Agriculture is a provincial subject and not merely provincial but a transferred subject: still a Royal Commission has been appointed. Perhaps it may be said that a Royal Commission is above all these laws which divide subjects into provincial and central. If the expenses of the Royal Commission were paid for by the British Government, that explanation would be intelligible, but the expenditure has, I believe, to be met out of the revenues of the Central Government, and therefore it must be justified under the scheme according to which subjects are divided into central and provincial and our expenditure is divided into central and provincial. If an extensive inquiry into the conditions of Agriculture is permissible by the Central Government and if the expenditure can be defrayed out of the revenues of the Central Government, I conceive that an inquiry like the one which I am asking for can be equally met from the revenues of the Central Government. Then, Sir, it may be said that it may perhaps wound the susceptibilities of Provincial Government if the Central Government embarks upon an enquiry which is entirely within the province of the Provincial Government. I, for one, do not believe that the Provincial Governments are likely to entertain any such sensitiveness or susceptibility on this matter, but, on the other hand, they would in all probability be glad if the burden of this enquiry could be taken off their hands and conducted by the Central Government themselves. Then, again, it may be said that there is an enquiry to be started in Madras, that there has been an enquiry completed in Bengal and that we should wait and see. Now, the answer to that is that this process of waiting and seeing the results will involve an enormous amount of delay. This Committee in Bengal was appointed in 1922 and it submitted its report some time about the end of 1925, more than 3½ years after it was appointed. We do not know when the Madras Committee is going to send its report. The problem is no doubt one which has to be examined from various aspects and will require very considerable time; but sooner the inquiry is started the better. The problem is one which requires not to be shelved with sympathy but to be grappled with in all earnestness and I do hope that the Central Government will make up their mind to accept this proposition and do what they can to solve these problems.

We may be asked how do you expect this problem to be solved? Is it not one of an immensely difficult character dependent upon

so many factors, upon the character of the people, upon the educational system and various other things. The fact that it is complicated renders it all the more urgent, that not a day should be lost in dealing with it. I do not believe that the Government is omnipotent, or even omniscient, but I do believe that the Government can as a collective organization do a great deal more than a mere private individual can do and that it requires the application of several minds and co-ordinate effort to arrive at some solution of these problems. In my own mind there seems to be two or three very radical defects in our present condition which require attention. The system of education which is now in force is conspicuous for its want of touch between the requirements of the employers and the courses of instruction and the standards of instruction and the facilities for training. We have several technical institutions such as Engineering Colleges, but their chief defect is that the products of the colleges when they are turned out are informed that their education has done them no good for want of practical training. What we want is a co-ordination between the theoretical and the practical sides of technical education and a co-ordination between the needs of employers and the needs of industrial progress and the education facilities in the country.

There are other defects no doubt which can be easily pointed out. In these and various other directions the problem should be attacked. There is, for instance, one question which, to my mind, is very important and which, I am sorry to say, has not been pursued in any detail by Dr. Meek's Committee. That is the question of small industries. The existence of openings for employment depends upon the economic progress of the country. That, again, depends upon a number of factors, such as capital, initiative, enterprise, co-operation and so on. There is one direction in which it is absolutely necessary to consider the possibilities of development and that is the possibility of starting small industries which do not require much capital and which, by the employment of a certain amount of labour-saving machinery in substitution of manual labour, may enable people with limited means to carry on small industries with a fair measure of profit. No sufficient investigation has been made into the possibilities of this question by the Committee in Calcutta. In this and various other directions it is quite possible for a Committee to arrive at some tangible remedy for this crying evil. I hope, therefore, that the Government will accept this Resolution and make an effort to deal with this evil which is productive of very great discontent among the rising generation. The discontent may be economic in its origin in many cases but it is bound to lead to political discontent and it is the duty of the Government to remove the causes of this discontent and grapple with this evil, the gravity of which, I am sure, will be recognized by the Government as well as everybody here. The question, therefore, now is: Is it the desire of this House that a really comprehensive inquiry into this question should be undertaken by the Central Government or is it merely to be left to be dealt with by the various Provincial Governments as they choose? I hope that the House will agree with me as to the necessity for an inquiry by the Central Government and therefore I commend my amendment to the acceptance of the House.

Of course, we may be told that there are caste prejudices and that the young men of India belonging to the educated classes are themselves to blame to a large extent for want of employment. But I believe that these causes, though they did exist to a very great extent at one time, are disappearing. Caste prejudices do exist even now to a certain extent. For instance, if you tell our educated men to undertake menial labour or some kind of employment which involving manual labour alone is a mere blind alley without prospects, there may be an objection. But to manual labour by itself the objection has been fast disappearing and I know from my personal knowledge that even among the most conservative classes in Southern India, namely, the Brahmins, the objection to manual labour has largely disappeared. I have been in Engineering Schools in various parts of India - in Bangalore, in Jamshedpur and other places and I know that even the Brahmin lads who have been taken as apprentices or students have been working as hard as members of any other classes. So, I do not believe that it is caste prejudices that stand in our way. It is the want of variety of walks of life, the absence of industrial expansion and the defects in our present system of education that are responsible for this present deplorable situation. I hope, therefore, that we shall receive not merely the lip sympathy of the Government but their earnest attention to this question by the appointment of a Committee to investigate the whole subject,

Electrical Progress in 1925.

By D. N. Dunlop,

Director, The British Electrical and Allied Manufacturers' Association.

The past year, as far as the electrical industry is concerned, has been characterized by a certain degree of inertia in the home market with a steady increase in the demand for electrical machinery from overseas markets. The fact is clear now to those responsible for the technical and financial control of the industry that a critical period has intervened in the electrical development of Britain which may decide the future of electrical progress and the industries connected with electricity in this country.

The stage is ready now for the great developments which are bound to take place in a short time; the power stations built since the conclusion of the war, Dalmarnock, Barton, North Tees, Nechells, Agecroft, have reached thermal efficiencies as high as the most optimistic engineer would have thought possible in 1917 and there are now over thirty stations in Britain which, with an average thermal efficiency of 16%, can stand comparison with similar stations in any other country. The achievement of the last five years has established the British electrical tradition and this factor will play an increasingly important part in the future. There are even now signs that large electrical schemes will be initiated in Britain; the new Bristol station on the Severn Estuary destined to house 250,000 kilowatts, the extensions to Barking station of over 100,000 kilowatts, the new stations at Oldham, Stockport and in the South-West Midlands, the important developments taking place in West Lancashire and the West Riding, all point to the fact that a further expansion in electrical power production is at hand.

Industrial Developments.

When we come, however, to the industrial demand for electrical machinery, the record of 1925 is one of almost unrelieved gloom. With the exception of special branches of the textile industry concerned with the spinning and weaving of artificial silk, of small sections of the metal industry devoted to the manufacture of specialities, the making of automobile and cycle accessories, for example, of certain industries which are sufficiently strong to withstand foreign competition—chemicals, rubber works, cement works and tube making—the industrial situation in Britain in 1925 was almost as bad as in 1922. Iron and steel, coal-mining, cotton and wool textiles, heavy mechanical engineering were working on a bare schedule, unable to earn sufficient profits to justify plant renewals and extensions; the demand for industrial motors was confined almost wholly to replacements and the provision of new generating plant for colliery or iron and steel power stations was even less than in 1922. Whether the policy of waiting for more favourable trade conditions before modernizing and extending ranges and methods of manufacture is justified or not is a difficult question and the electrical industry has certainly been adversely affected.

The only industry, among the basic industries, to show a revival of activity, although on a very small scale, was general engineering as apart from marine or heavy plant engineering; but this industry is exceedingly well equipped electrically and the improvement was not translated at once into the demand for industrial motors. Various reasons have been advanced for the sudden and disastrous setback which occurred in the home market in the second quarter of 1925, chief among them the reversion of this country to the gold standard. The dangers of such a reversion were pointed out by Sir Benjamin Longbottom in his annual speech in March of last year and we have seen his prophecies translated into reality but I think it would be a mistake to attach the entire blame to this tampering with the ordinary development of economic forces. The real reason should rather be found in the extraordinary persistence with which our home needs were met by imports when the national production was more than ample to cover those needs. This applies specially to manufactured goods. The first four months of 1925 showed an orgy of imports quite beyond record in the history of this country and those imports were not absorbed at once into national consumption.

Britain has been suffering during the last year from an acute dose of indigestion translated into the symptoms of overstocking, lack of demand for national products and lack of cash resources to finance even the stocks imported. There was scarcely a basic commodity with the exception of rubber which found a market even at greatly reduced prices, iron

and steel products and machinery have declined steadily. The gold standard accentuated this tendency but it was not the cause.

PROGRESS OVERSEAS.

The electrical industry has suffered severely through this decline in the national productive activity but in the foreign market it can point to a year of very considerable success indeed. The year 1925 represented a year of record activity in the export branches of electrical industry—due possibly to the effects of the First World Power Conference which was, at bottom, a magnificent advertisement for the British electrical industry, but more probably to the reputation the British product has created for itself. Results are always the decisive factor and the results achieved in power stations equipped by British firms during the last six years have been such as to discount questions even of price. In addition to this, economic recovery has been fairly rapid in certain markets which were badly depressed a year ago. Japan is perhaps the most striking instance of this; Japanese foreign trade returns are becoming more and more favourable largely through the increased demand for silk, and Japanese finance is now being carefully and wisely controlled. Japan placed some important orders with British firms in 1925 and there is little doubt that, in a few years, we shall be challenging the American domination in that valuable market.

South Africa is embarking on suburban and main line electrification on a large scale and provides British firms with important contracts; India is in a sounder position financially than it has been at any time during the last four years and absorbs an increasing volume of electrical products every year, although Swedish and German competition threatens again to become acute; New Zealand has found its plans for ensuring an adequate national supply of electricity inadequate to meet the extraordinary demand that has arisen for electrical power and is now contemplating further electrical schemes; Australia is driving steadily ahead, both industrially and agriculturally. All those countries increased their plant requirements during 1925 while, in addition to them, other markets opened out, especially in the South American and Central American zones, in Central Africa, in the Middle East and in the Straits Settlements. The electrical industry was never in a stronger competitive position than at the present moment and is preparing for more intensive cultivation of the export markets than even now. It is steadily advancing against American, German and Swedish competition and gaining ground wholly on a basis of results.

The year 1926 should be fairly satisfactory from the electrical point of view. The educative campaign carried out during the last two years in the daily press, directly and indirectly, has brought home to the nation as a whole the necessity for greater electrical development and there is a widespread interest in electrification. The industrial situation is beginning to clear up, largely as a result of greater stability in international politics, and the realization of a national electrical policy by the Government will do much to place at the disposal of industry that which it requires above all in its struggles against foreign competition—an abundant and continuous supply of cheap electrical power.

Silencing Motor Cycles.

If current indications are to be believed we are at the commencement of an era in which really silent motor-cycles are being demanded in appreciable quantities, and from this has emerged the fact that motor-cycle engines can quite legitimately be divided into two classes —those which can readily be silenced, and those in which the exhaust noise is difficult to quiet by any practicable muffling device. This latter class, says *Motor Cycling*, is made up in the main of sporting-type single-cylinder engines which possess early exhaust valve openings, and high compression ratios.

To use the word "impossible" is obviously unwise in this age of mechanical and scientific achievement, but, unless some new principle is developed, it almost seems as it is indeed impracticable to devise a means of satisfactorily silencing the type of engine in which our chief pride rests– that, in fact, which has been evolved after many years of intense effort to produce the greatest horse-power from the smallest possible capacity.

Given an engine with a reasonable valve tuning and cam counter, and presuming a moderate compression ratio, almost any silencer makes the exhaust inoffensive to the ear, but take the same engine and adapt it so that it is worthy to take its place among sporting power units, and the problem of silencing becomes a very real one.

Some Aspects of the Economics of Welfare.

By K. R. Padmanabhan, B.A. (Hons.)

The attainment through Wealth of Welfare is recognized in all modern economic treatises as the entire subject-matter of Economics. This in his classical work on the Economics of Welfare, Dr. Pigou defines his study as treating "that state of subjective and objective satisfaction, derived from the enjoyment of utilities, which is capable of being measured in terms of money". In this connection for clearly analysing the concept of economic welfare a distinction is usually made between individual and social economy. From the individual point of view every addition to income is reckoned as an enhancement of economic welfare, the law of diminishing utility notwithstanding. But from the social or national point of view every increase of individual incomes by which means the national income or national dividend is enhanced, does not have a like effect on economic welfare. The distinction between individual and social income may be further illustrated. We might count as an addition to income all sorts of individual borrowings while the foreign loans of a nation, except when it is productively invested within the country, cannot be treated as additions to the national wealth or the national dividend.

The national income or the national dividend is the sum total of goods produced within the country in a given period (Marshall's view), and is also the sum total of goods consumed by all the members of a community in the given period (Fisher's view). From the national or social point of view as from the individual's viewpoint every increase of the national dividend is an addition to economic welfare. But the various streams or contributions of utility or goods which flow to make up the national dividend do not affect economic welfare to the same extent. The scrutinized study of statistics of consumption and national income makes us realize the fact that the principle of equi-marginal utility in consumption is capable of a more universal application. Thus while the principle is true that an individual makes the greatest addition to his consumer's surplus by so distributing his resources as to produce an equi-marginal satisfaction from all the different goods or services consumed; it is no less true of the national income that a more equal distribution of resources between the various classes of a Nation increases economic welfare more than in proportion.

The principle underlying is that a man getting an income of £50 and another getting an income of £50,000 do not get the like satisfaction from their incomes. The marginal utility of money and hence the consumer's surplus derived from its use is greater for the poor than for the rich. Every pound of additional income to the poor man increases economic welfare, or the money measure of social satisfaction, more than in proportion to what it takes away from the rich man.

The law has been generally enunciated by Professor Pareto, the Italian Economist, as a result of a long and detailed investigation of consumption statistics. Stated broadly, it means that every transfer of income from the very rich to the very poor by equalizing satisfactions, produces a more than proportionate increase in the total economic welfare resulting from the redistribution of the National Dividend.

Pareto's Law, however, has been severely criticized on all hands. Advocates of the capitalist system have branded it as revolutionary and frankly socialistic and again as reactionary, because, by depriving the man of large savings of his income the incentive to accumulation of Capital would be at an end and the total wealth of the community, the stock from which proceeds Income and Welfare, would be handicapped. But though it is possible to pick holes in the general reasoning of Pareto, it is not possible to deny his conclusions. Dr. Pigou contends and has the authority of Marshall behind him as well as of the greatest living economists, that any economic readjustment in the country which tends to equalize the income of the individuals or interests making it, *per se* increases economic welfare. The income of the very rich, because the marginal utility of money is low for them, adds less than in proportion to the income of the poor to economic welfare, and hence every transfer of income by the gradual readjustment of the productive agencies, from the very rich to the poor, increases the economic welfare of the community, in a progressive ratio.

For us in India this aspect of the Economics of Welfare possesses special interest. To

some extent it may be safely said that neither in its degree nor in its extent is the inequality of incomes in India so flagrant as in the industrial countries of the West. If we have no multi-millionaires or petroleum magnates, we are very much worse off than even the most backward of western countries in the extreme poverty of our poorest class. The poverty problem in India is not the less acute because its sufferings appear spread out over a vast area and among a large population, and is even to some extent mitigated by our exclusively agricultural economy. But the absence of a class of middlemen engaged in commerce and industry, side by side with the rentier class and the "unearning" aristocracy of Rajas and Zamindars can only bring into striking relief what inequality of incomes there is amongst us. It is difficult as yet to estimate the true extent of the inequality of incomes in India either from Income-tax or from Land Revenue statistics. There is a further difficulty, for the effect of our agricultural economy, and the variety of our land tenures would be to vary the incidence of the inequality from province to province. In that sense, therefore, there is no true standard of comparison between the standard of life in the Zemindari villages of Bengal, and the Ryatwari villages of Tamilnad. But even here the percentage of the riots (the actual cultivators of the soil whose income is fairly equal all through India), to the richest classes of Zemindars and Mirasdars may be roughly taken to be equal. In all, if we cannot say of India, as we say of England, that roughly three-quarters of the national wealth is in the hands of hardly a fifth of the population, a deeper study of facts and figures would certainly be found to show that the tendency even in India is towards a greater inequality of incomes.

If this tendency which is likely to become more pronounced with growing industrialization is to be countered, if economic inequality is to be mitigated as between classes and interests so as to produce the greatest economic welfare to the community, the necessary economic readjustments can only be made by the agency of the State. Taxation is easily the most accessible as it is the surest method of equalizing real incomes. Already we have some elements of this policy in our fiscal system as in the progression of the income-tax and the levy of super-taxes. In adopting the Report of the Taxation Enquiry Committee will our future policy be so shaped as to have in view the equalization of the net incomes of classes and interests by readjustments of the burden of taxation, and so effect the maximization of the economic welfare of the community?

Encouragement of Agricultural Research.

By "Scrutator".

In the year 1911 Sir Sassoon David, Bart., in commemoration of the visit to India of the King-Emperor and Queen Mary placed at the disposal of the Government of Bombay, a sum of Rs. 8,01,000 to be devoted towards agricultural and educational purposes and for the promotion of the welfare of the people of the Presidency of Bombay. The Government of Bombay thereupon instituted the Sir Sassoon David Trust Fund with a Board of Trustees consisting of the Secretary to Government, Revenue Department, the Secretary to Government, Educational Department, two gentlemen nominated by His Excellency the Governor of Bombay, and Sir Sassoon David or his nominee. The present members of the Board are:—

1. G. A. Thomas, Esq., C.I.E., I.C.S., M.L.C.
2. A. Master, Esq., I.C.S., M.L.C.
3. Sir Sassoon David, Bart., K.C.S.I.
4. Sir Jamsetji Jeejeebhoy, Bart., K.C.S.I.
5. Thakore of Kerwada.

It was laid down in the Trust Deed that the interest on the capital sum might be utilized in giving grants-in-aid towards the establishment of rural agricultural schools where the vernacular is the only or the main medium of instruction, in giving grants-in-aid towards experiments having for their object the introduction of improved methods of agriculture suitable for use in the Presidency, for the building of hostels attached to educational institutions of all classes in the Presidency of Bombay, etc.

A considerable part of the income of the Fund has been placed in the hands of the Director of Agriculture for the purpose of carrying out investigations into specific agricultural problems, and gratifying results have been obtained by the moneys provided by the

Fund. The investigation of the difficulties of potato cultivation in the Bombay Presidency has enabled several problems to be solved and the methods devised for checking diseases, etc., have proved beneficial and have gradually come into common practice. The necessity for importing exclusively Italian or other seed potatoes has been largely done away with. The results of this investigation have been described in two bulletins issued by the Agricultural Department, and leaflets on important points have also been issued.

Grants from the Fund have also been devoted to the investigation of the insect pests of jowar which, it is calculated, lead to damage amounting annually in the Bombay Presidency to 1½ crores of rupees. The money provided by the Fund has enabled the Department to institute a special enquiry into the habits, etc., of the pests and to ascertain the best methods of combating them. The problem has not been completely solved, but the progress made has been great, and it is hoped that in the next two years a complete and practical solution will be reached.

Another grant from the Fund has been utilized towards the improvements of grazing lands. The life history of the best and worst grasses found in the grazing areas has been studied and as a result ways and means have been found for improving grass production. The line of action which seems most promising is the rotation of grazing and the regulation of the number of animals put upon the land. This method has shown, in one case, to have increased the feed available by 400 per cent.

Attention has been devoted to what is probably the most serious weed of cultivation —the well-known Lavala weed which infests much of the best land in the Bombay Presidency. The life history of this weed has been carefully studied and as a result methods have been devised which promise to give a practical method of eradicating it if persistently followed. These methods include spraying the green shoots with a solution of common salt, heaping any sort of refuse on the land, deep ploughing immediately after the rains followed by frequent turning over and pulverization of the soil, etc.

Endeavours have been made to secure improvement in drought-resisting food crops of which the most important is Bajri. The work in this connection has proved disappointingly slow owing to the extreme mixture of types which now exists in cultivation, and it will be some years before the results obtained can be applied on a very large scale, when other types of Bajri, equally drought-resistant with those now in cultivation but yielding from 20 to 30 per cent more crop, will be in general use. Researches have been made to ascertain the causes for the deterioration of cardamom cultivation and valuable information has been obtained. In addition to the contributions given for the above investigations, donations have been given from the Fund :—

	Rs.
(*a*) For scholarships, construction of buildings or contributions towards the working expenses of vernacular agricultural schools	55,710
(*b*) For the maintenance of the family of an officer of the Agricultural Department who had gone to America to study Agriculture	1,800
(*c*) Demonstration of a Steam Plough Plant	2,995
(*d*) Museum at the Agricultural College, Poona	2,500
(*e*) Introduction of improved methods of growing and handling of sugarcane and development of sugarcane cultivation on canals	25,000
(*f*) Development of the experimental pumping station established on the Agricultural Station at Poona	5,000
(*g*) Purchase of an automatic water finder..	750
(*h*) Experiments in connection with fodder storage and building of silos for fodder storage	32,000
(*i*) Contribution to the Poultry Farm at Sangli	3,000
(*j*) Construction of a hostel in the Edward Memorial High School at Kaira, a hostel for Koli boys in the Akola Dangs, a hostel for Jain students in the Sardar High School at Belgaum, hostel for the Dharwar High School, Moulvi's quarters—Sind Boarding House, Karachi, and grant to the League of Mercy's Home at Khandala	41,246
(*k*) Construction of a rice experimental station at Karjat	10,000
(*l*) Investigation of the mango problem ..	5,000

For the current year Rs. 36,335 have been allotted for the following purposes :-

	Rs.
(*a*) for the continuation of researches in connection with insect diseases of jowar, improvement of grazing lands, improvement of Bajri crop and economic efficiency of agricultural implements	21,335
(*b*) for the popularization of the use of Chaff cutters	5,000
(*c*) for the extension of the use of concentrated manure for cotton in Khandesh	5,000
(*d*) for grant of Rs. 500 to each of the six vernacular agricultural schools ..	3,000
(*e*) Contribution to the Poultry Farm at Sangli	2,000

Since the inauguration of the Fund a total sum of Rs. 3,13,333 has been devoted to the objects enumerated above.

Tanning Industry in U. P.

The following is an extract from the Annual Administration Report of the Department of Industries, United Provinces, for the year 1924–25 :—

GENERAL CONDITION OF THE INDUSTRY.

There was a rise in the price of hides and skins and an increase in the demand for chrome leather, otherwise there was no appreciable change in the condition of the leather trade or of the tanning and leather working industry. No tanneries in this province, with the exception of one at Cawnpore and another at Agra, employ chrome tanning processes. They were made on the model of the Harness and Saddlery Factory and have been making only one particular class of leather, *viz.*, Heavy leather—(Bark-tanned)– which is suitable chiefly for military purposes. The leather manufacturing industry continued to expand gradually. Some of the smaller works were closed, but new ones were opened, and extensions of existing works took place. Messrs. K. V. & Co. of Agra considerably extended their operations. The Dayal Bagh Model Industries also started manufacturing leather goods. The Agra Tannery was reorganized and showed marked improvement in the quality of chrome leather manufactured by it The United Provinces produce about one-fifth of the total wealth of the country in hides, and they are also the chief footwear-producing area in the country ; tanning, therefore, presents almost an unlimited scope.

NEED FOR SMALL TANNERIES.

The failure of certain tanneries in recent years and the large outlay involved in a tanning scheme on factory basis militates against large extension of tanning factories, but there is room for small tanneries employing modern methods. These would be more advantageously placed than the larger ones situated at long distances from the areas of production for avoiding the great preventable wastage which takes place in dealing with the raw material in all its phases. The small tanneries will also have to spend less on overhead charges. Vast quantities of hides and skins are at present tanned in villages by men who are ignorant of scientific methods and processes. Ignorance of scientific methods and the prospect of immediate gain from the sale of hides and skins as such has blinded the village dealer, producer and tanner to the possibilities of village tanning conducted on modern methods. If the village tanner could be trained in modern methods of tanning and could produce leather from which articles of modern tastes can be made his profits could be more than doubled. Schools for educating village tanner in improved methods and processes are, therefore, urgently needed. The scheme of a tanning school at Cawnpore was referred to the Burn Committee who did not recommend it, and is now before the Government. Another scheme formulated at the suggestion of Rai Bahadur Ishwari Sahai for starting a tanning school in Fatehpur was approved by the Board of Industries and has been submitted to Government.

Experiments on chrome tanning were made at the Technological Institute where a small experimental tannery has been erected and the students of that Institute are now able to make chrome leather. The samples were approved by some of the manufacturers at Cawnpore, one of whom has decided to start a chrome leather factory if he can raise the necessary funds. One of the Leather students has already been employed by Messrs. Cooper, Allen & Co., Cawnpore, as an Assistant Tanner in charge of the tanning section.

According to official figures just issued the production in Russia's metal industry during the last fiscal year reached a value of 383.7 million roubles, or 48 per cent of the pre-war value. A good harvest of 1925 has increased the purchasing power of the agricultural population and, consequently, its demand for the products of the metal-working industry. Nevertheless, a large part of the requirements of the population has gone unsatisfied. In order to avoid a serious disturbance on the home market, the programme of production for 1925–26 will have to be increased by 66.6 per cent. This increase is the maximum which could be attained in present conditions. It is not certain whether this programme can be carried out in full. The main difficulties in the way are the lack of housing for the 120,000 new workers required, defective equipment, and lack of fuel and raw materials. These difficulties can be overcome only if the metal workers understand how important every extra *pood* of output is for the reconstruction of the country, and if they increase production by means of intensive labour.

Indian Income-tax Report.

By Christopher Hay, M.A.

The All-India Income-tax Report for the year 1923–24 issued by the Central Board of Revenue is an interesting document. We are giving the main features of the Report below grouped under Provinces.

Madras.—The year 1923–24, on the income of which most of the assessments during 1924–25 were based, did not fulfil expectations. The prosperity of the south-eastern districts of the Madras Presidency is largely dependent on trade with the Strait Settlements and Malay States. The price of rubber ruled low in 1923–24 and the capital of the Nattukkottai Chetties was locked up in depreciated rubber estates. There are also indications that Madras has lost the Ceylon market for its rice, which has been captured by Rangoon rice since the war. Cotton mills and ginning mills did badly during the year. The European exporting firms on the west coast and the Tea estates did better and there was also a short-lived boom in the turmeric and tobacco trades.

The province suffered from two serious calamities during the year. In August 1923 heavy floods occurred on the west coast, particularly in South Canara, and did considerable damage to life and property. Timber merchants suffered very heavily. In November 1923 a severe cyclone swept over Ganjam and Vizagapatam and caused much loss.

Bombay.—The year was one of depression all round. Many businesses suffered heavy losses, even though the turnover was good. The profits of cotton mills in 1923 were the lowest since 1915. From the maximum of about 16½ crores in 1915 they shrank to 2¼ crores in 1923–24. Other industries and trades did little better, with the possible exception of Banks.

Bengal.—Tea and Jute continued to prosper, but piece-goods were still dull and shipping had a bad year. The mining industry continued to decline and most industrial concerns fared badly. Money was tight and financial conditions were by no means favourable. On the whole, however, things were not worse than in the previous year. They were perhaps a shade better. An important feature of this year was the anti-usuary movement, in some parts of East Bengal, amongst the Mahommedans and Namsudras against the money-lenders, which resulted in reduced profits to money-lenders.

United Provinces.—The price of grain fell heavily. As elsewhere cotton mills did badly. There was a heavy fall in the price of sugar. The floods of last year affected the progress of both assessment and collection.

Punjab.—The year was not very prosperous though it was on the whole a little better than the previous year. Piece-goods showed a slightly upward tendency for some time, but business became dull on account of plague at Amritsar.

Burma.—The year was less than normally prosperous. The season was poor for all important crops. Trade continued slack and though a large number of new rice mills were opened several had to close down. There was no improvement in the export trade of hides and skins. There was a slight increase in the exports of timber, but this was due to the accumulation of stocks which had to be put on the market at lower prices.

Bihar and Orissa.—General trade conditions were much the same as in the previous year. The coal market was very dull, especially for collieries producing 2nd and 3rd class coal and many such were closed down. The state of the coal market reacted to some extent on the timber trade in Chhota Nagpur. The shellac trade was depressed but mica showed some improvement.

Central Provinces.—Cotton mills did very badly. The cotton trade of Berar did no better. Manganese had a better market, but on the whole trade and industry were both depressed.

North-West Frontier Provinces.—Reference must be made to the Kohat riots which completely dislocated business. In several cases the taxes had to be remitted, the assessees having been reduced to abject poverty, and the Government of India have also exempted from Income-tax so much of the income of those affected as is spent on the repayment of capital or interest to Government on account of the loans made by the latter for reconstruction.

Business men of England have not the same spirit of adventure which led their fathers to go out into the world to seek trade.—*Mr. F. E. Powell* (American Chamber of Commerce).

Irrigation Work in India.

By "Bystander".

The Triennial Review of Irrigation in India, 1921–24, issued by the Government of India Press, Calcutta, is noteworthy as giving the history of the first three years of irrigation as a "Provincial" subject under the Reforms. Up to the close of 1920 the Government of India made all decisions of importance. Since then initiative and decision have been with the Provincial Governments, subject only to capital borrowings being consolidated in the loan transactions of the central authority, and to new projects costing Rs. 50 lakhs (£375,000) and upwards requiring the sanction of the Secretary of State in Council. The revised classification of irrigation works for accounts purposes simply provides for them to be divided between productive and unproductive works. The old discrimination between major and minor works has been abolished.

The war showed down constructional progress, but an active programme has since been pursued. The average area irrigated annually in British India by Government works of all classes during the triennium was 27,500,000 acres, as compared with 26,750,000 acres on an average for the previous three years. The highest total ever recorded was reached in 1922–23 with over 28,250,000 acres.

During 1923–24 the net area cropped in British India was nearly 223,250,000 acres, and the area irrigated by Government was close upon 12 per cent. of this total. The estimated value of the crops so irrigated amounted in the year to 1½ times the total capital expended on the works. The net return in revenue on the capital was 7.71 per cent. It should be borne in mind, however, that the total capital outlay to date of Rs. 8.925 lakhs includes considerable expenditure upon great projects under construction, as well as upon others which have but recently been completed and irrigation upon which is only now beginning.

Punjab.

The present report, unlike its much fuller and more descriptive predecessor, gives the information, apart from the first chapter, province by province. It is natural to run first to the Punjab, where some five-thirteenths of the total Government provided irrigation of British India is to be found. The average irrigated area in the land of the Five Rivers (38 per cent of the total cropped area) was over 1,000,000 acres more than that of the previous triennial period. The increase was shared by all the canals, and was due to the favourable climate conditions and to the steady development on the canals of the Triple Project, especially the lower Bari Doab.

The triennium saw the initiation of the Sutlej Valley project, which is designed to irrigate over 5,000,000 acres, 3,000,000 being in the Native States of Bahawalpur and Bikaner. In addition to preliminary work, which included extensive surveying and selection of the sites for the headworks and of suitable canal alignments, construction of railways, and constitution of a quarries division for the supply of the large quantity of stone required, good progress was made on the manufacture of bricks and lime, and on the collection of stone. A large quantity of earth work was executed on the canals and at three of the four headworks. A notable feature of this vast scheme is the introduction of machinery on a large scale. Mechanical excavators of various types are being employed for excavation purposes, while pumps, concrete mixers, etc., driven by electric power generated in large power stations equipped with the most modern machinery, are in use at the headworks and elsewhere.

Bombay Presidency.

A still greater work, indeed the greatest ever undertaken in the history of India, is the Lloyd (Sukkur) barrage and canals project in Sind, the construction of which was being started at the close of the triennial period. Other works in progress in Sind are improvements to the Pinyari canal, the construction of a head regulator over the Baghar canal, the Garkino canal project, the raising of the banks of the Fuleli canal and the provision of a new head regulator over it at Jamshora; also the remodelling of the right and left bank branches taking off at the ninth mile of the Mithrao canal.

In the Presidency Proper the Bhandardara dam on the Pravara river, in the Western Ghats, almost reached at the close of the period the designed height of 270 feet. The canals have been excavated and the whole scheme will be completed next spring. As the construction of the dam progresses water is

being made available for irrigation in increasing quantities. There is further a possibility of developing hydro-electric power to the extent of about 5,000 e.h.p., there being a natural drop of over 150 ft. in the river bed not far from the dam.

The Lloyd dam at Bhatghar, in the Deccan, in connection with the Nira Right Bank canal, is expected to be completed to its full height of 190 ft. by the end of 1926, but irrigation has already started. The latest constructional methods are being applied, and it is expected that the new storage will provide sufficient head and discharge for the development of about 3,000 e.h.p.

The projects under consideration include the Dahitna tank for supplementing the supply of water from the Ekruk tank at Sholapur; a scheme for the remodelling of the Mutha canals; the Gokak canal extension project; and the Nira Valley Development scheme, which provides for the widening and remodelling of the Nira Left Bank canal as well as for the construction of a new dam at Vir to supplement the supply from the Bhatghar dam. The proposed dam site is adjacent to the present pick-up weir at Virwadi. The capacity of this reservoir above the level that is required to supply the canals will be 8,334,000,000 c.ft. and it will also serve as a balancing reservoir during the period June to October. The fact that the site is below the confluence of all the main tributaries of the Nira will permit the run-off from the whole available catchment area to be utilized for the supply of both the Nira Left Bank and the Nira Right Bank canals, a very important consideration in years of scanty rainfall. The Left Bank canal will be remodelled so that certain suitable areas on the lower reaches of that canal can be brought under perennial irrigation. The new works proposed will bring under irrigation an additional area of 35,500 acres in very precarious tract of the Deccan.

United Provinces.

The United Provinces Government like those of the Punjab and Bombay, is responsible for a current work of "the first magnitude," to quote the report. On the Sarda Oudh Canals and the Sarda Kichha feeder over Rs. 200 lakhs (£1,500,000) were spent during the triennium. Owing to difficulties encountered in dealing with water in the foundations, progress on the head works has not been so satisfactory as was expected. The river springs proved much stronger than was anticipated, and the pumping plant gave considerable trouble. It has now been finally decided that the only way to overcome the difficulties is to put in a central electrical power station, and this is being done. The head works are a critical factor in the whole scheme, and strenuous efforts are being made to complete them in time to supply water to the canals, which are being excavated most satisfactorily. The right and left bank training bunds were all but completed when the report was written, and some work had also been done on the main barrage. The Docha barrage, consisting of eleven spans of 40 ft. each, with gates 12 ft. high, has been nearly completed, and the steel work and gates erected.

The project for a third reservoir on the Betwa river near Kaprar to supplement the supply of the Betwa canal has been sanctioned, but the design of the weir requires re-examination and revision. The scheme for the extension of the Dhasan canal across the Burma river has been dropped for the present. The Ohen and Paisuni canal projects in the Ken canal division have been indefinitely postponed.

Burma Problems.

The great variety of conditions under which the canal engineer works in the Indian Empire is illustrated by some passages in the section on Burma, where one-eighth of the net area cropped is under irrigation. It is stated that the Shwebo canal was becoming less efficient year by year owing to scour caused by excessive velocities in the main channels and consequent silting of minor channels and water-courses. Command has been lost owing to the deepening and widening of the channels, and maintenance has become difficult and expensive as a result of heavy silt clearances and general deterioration of many of the channels. It has accordingly been decided to remodel the system so as to improve the working of the canal. Several other canals are being remodelled on similar grounds, or to bring further areas under irrigation. The question of the best method of controlling the floods in the Panlaung river, which has been under consideration for a number of years, is at last in a fair way to be solved by the decision to construct a masonry dam, 120 ft. high, to form a flood-modulating reservoir on the river.

There is everything to be said for a completely free gold market, but nothing for a gold standard in a glass case.—*Sir John Ferguson.*

Agriculture in the Punjab.

Proposed Research Board.

At the Punjab Legislative Council, held on March 18, Sardar Jogendra Singh, Minister of Agriculture, made a statement regarding the programme of work the present Ministry of Agriculture would follow during the coming months. The Minister regretted that during the Budget discussion on demands for nation building, the subjects were dismissed in a day. Was the problem of unemployment of so little moment, he asked, as to receive such scanty attention? He thought the official benches must lead, but the House must co-operate in exploring fresh fields and new schemes. He proposed with the approval of the Governor to call together a Board of Research and Trade, and wished to frame a scheme in consultation with the Council and others outside the House to make the Board a live body with full representation of all people interested in industrial development, with branches in all industrial centres of the province, and with a small executive committee which would keep its hand on the trade pulse of the province and indicate definite lines of industrial developments. The object of the formation of the Board was to bring training, enterprise, and experience together, to explore in a systematic manner the possibilities of organizing and developing industries, and will be called into being as soon as all the opinions that he was inviting to-day were received and assimilated. The function of the Board in the province will be advisory, but it will be within the scope of the Board to examine proposals for fostering new industries, and to make recommendations and to make a share both in the matter of providing capital management. The executive body of the Central Board may in time to come win for itself a more important place and begin to function in the same way as the Trade and Research Boards at present function in England.

The Minister added that in the present year he was going to examine the possibility of developing vegetable oil and sugarcane industries, and also hoped to establish a Model Hosiery School at Ludhiana and supply it with modern machines and designs. Government were also going to enquire into the possibility of developing the soap industry at Amritsar, but above all he was going to examine, he said, whether they could not make power weaving a home industry in the Punjab. The Minister of Agriculture concluded his statement by saying that the development of industries was one of the vital problems which the House and Government must take up if they were to save the rising generation from despair, and to afford them means which would make life worth living.

Indian Timbers.

A very interesting survey of the timber exhibit in the Indian Pavilion of the Wembley Exhibition, by Professor Troup, of the Oxford School of Forestry, forms an appendix to the Report of the Commissioner for India. In the course of his survey, Professor Troup speaks with special appreciation of the Indian and Burmese timbers mentioned below: -

Laurel wood: panels of exquisite grain and colour: doors that were a striking representation of strength combined with beauty and dignity.

Gurjun: flooring: panelling: furniture of the simple and rather severe style usually associated with English oak—its use a discovery likely to be heard of further, as it is cheaper than oak.

Padauk: an ornamental wood of the highest class, of a rich red colour, exquisite grain and beautiful finish: used for interior decoration of Pullman cars, for bank and office counters, and for a staircase in which it maintained its colour and appearance perfectly and the stairs, ascended by thousands of visitors, show no signs of wear.

Silver grey wood: staircase—the same remarks as on the staircase of *padauk:* panelling - revealed as one of the finest carving woods in the world.

Pyinma: very effective for panelling.

Rosewood, coralwood and *Indian satinee:* richly coloured woods used most effectively for interior decoration in ornate style.

Professor Troup records the opinion that, at Wembley, Indian timbers received the best and biggest advertisement that they have ever had: and that, if future trade is well developed on proper lines, the money, time and trouble expended on the exhibit must inevitably recoup itself many times over. He was impressed with the number of superlatives in the English language, when he listened to the remarks of visitors about woods previously unknown to them, but whose names are now household words. Though it is a well-known fact that new timbers are looked upon, by users and by the trade, with the greatest suspicion, Indian timbers have come definitely to stay: and a number of cables have been received, from American and Continental visitors, asking for quotations for Indian timbers that they had seen at the Exhibition.

He mentions, as a remarkable fact, that, though several large timber firms have been at work in the forests of India and Burma for many decades, they have failed to develop a market in Europe for any but a few well-established kinds of wood, in spite of ample opportunities: and adds that, now that the excellent qualities of so many new kinds have been so convincingly demonstrated, "one of the gravest risks to the future development of trade in these timbers will be the anxiety of inexpert traders to exploit them regardless of proper selection and treatment, with the sole object of immediate gain. So long as the development of this trade is in the hands of competent persons, there is little reason to doubt that the future expert trade in Indian timbers, hitherto little known or unknown in the European market, will expand out of all belief. Indeed, the chief limiting factor would seem to be the possibility that regular supplies will not be forthcoming in sufficient quantity: a matter which may call for further organization on the spot."

There can be no doubt that this warning is both necessary and timely. It is evident that there is a great future before the trade in Indian timbers, if it can be kept in the hands of reputable and responsible firms who can be relied upon to look to quality as well as quantity. Such practices, as the "mixing" of cotton, the admixture of dirt with grain, and false grading of coal, have frequently handicapped the trade of honest Indian exporters in the past: and, if this promising new trade is to be successful, it is most necessary that every precaution should be taken to prevent its abuse by the unscrupulous.

Economics in the West.

Economy Talk in Britain.

London.—I cannot better describe the prevailing nervousness than by quoting from an article by Sidney Mervine in the *Sunday Pictorial*. He says *inter alia*:—

Perhaps the most outstanding characteristic of the present Cabinet is its extraordinary timidity. For months past the Prime Minister and the Chancellor of the Exchequer have been telling the country that our national finances have reached a position of the utmost gravity.

In speech after speech they proclaim the urgent need for economy in public expenditure and warn us that if economy is not secured increased taxation will be necessary. And there the matter ends. These prominent politicians then leave us to ponder on the implication that they themselves are powerless: that the business of reducing expenditure falls not upon the Cabinet but upon a vague entity called the public; if that vague entity fails to take some undefined action the nation must pay the price.

In plain language, such an attitude on the part of men occupying positions of responsible authority is nothing more than a demonstration of political cowardice. They and their colleagues in the Cabinet constitute the Government of the country: it is their business to govern. They cannot escape that plain duty by the superficial plea that Great Britain is a democracy and not an autocracy.

That distinction affects the form of government; it does not affect the obligations of the elected governors. The essence of democracy as distinct from autocracy is that the people themselves choose their rulers, instead of being ruled by autocrats who have inherited power or won it by the sword. *But the men who are chosen to rule are not entitled to shuffle off the duties of a ruler.*

They sought the offices which they have won; it is their business to discharge the responsibilities which belong to those offices. This obvious duty Mr. Baldwin and Mr. Churchill are deliberately refusing to face

The Conservative Party were elected to office on a distinct and definite pledge that they would carry out a policy of drastic economy in public expenditure.

On the contrary, so far from reducing expenditure, they have actually increased it since they came into power. Unless revenue comes in with exceptional rapidity during the current year there will be a deficit in the next Budget.

Even more important are the prospects for the ensuing financial year. It is the estimates for that year that are now under discussion in Parliament, and unless they are drastically reduced, the country will obtain no relief from the already excessive burden of taxation; it will have to submit to still more taxation.

Yet our Ministers, instead of firmly using the powers conferred upon them by the nation—or alternatively confessing their incapacity and resigning office—merely continue to bleat, like scared sheep, that economy is essential.

What is the explanation of this political cowardice? In the main it is due to the pressure of private interests. One of the most paradoxical consequences of Parliamentary government is the way in which in practice it leads to the predominance of private interests at the expense of public welfare.

We elect politicians to represent the nation and to serve the nation and they promptly set to work to favour particular groups of individuals, regardless even of their own electoral pledges. In the present instance a large part of the nation's trouble arises from the fact that a vast army of people are drawing money out of the tax-payer's pocket. Some of them are employees of the State, others are dole-drawers. In the former class must be reckoned the large body of well-organized school-teachers, who raise a shout directly any proposal is made for reducing educational expenditure. Yet our public expenditure on education far exceeds the rate of expenditure in other European countries, which are at least as well educated as England is.

Two figures may be quoted to show the heedless way in which educational expenditure has been allowed to grow. Twenty years ago, in the year 1905–06, the charge upon the national exchequer for education in England and Wales and Scotland was just under £15,000,000; the corresponding figure, as estimated for the current year, is well over £46,000,000—a more than three-fold increase.

In addition, there has been an increase on a very similar scale in the charges for education borne upon local rates. Yet the child population is very little greater now than it was then. The explanation of this huge growth of educational expenditure is that every kind of faddist has been allowed to impose additional charges upon the tax-payer and the rate-payer in the name of education.

Out of most of this expenditure the nation gains nothing; indeed, it loses, because the aim of the educational faddist is to teach the children of manual workers every "accomplishment" except the art of earning a living by manual work.

The Evil of the Dole.

Another factor which helps to explain the failure of our politicians to carry out their pledges is the mental obsession that if they insist on facing hard facts they will be accused of being unsympathetic to the working man. But we are none of us justified in following a devious course out of fear that somebody may attribute false motives to us if we stick to the straight path.

Some of the gravest evils from which the honest working man is suffering are directly traceable to what is politely known as the unemployment insurance scheme. In practice a large part of the expenditure under this scheme represents a gratuitous dole given by the State to persons who are—or profess to be—unable to find work. Notoriously the effect in thousands of cases is to induce men and women to refuse to accept jobs offered to them. They sacrifice the few extra shillings that work would bring them because they can get more amusement by living in idleness on a State-provided income. The whole system is rotten from the base upwards.

The first step towards the removal of this double burden upon the nation is to reduce the amount of the dole, so as to diminish the temptation to the dishonest dole-drawer. Our professedly Conservative Ministers are afraid to take this obvious step for fear of offending the Socialists, who increased the dole when the Labour Party was in power. Yet the Conservative Party, which was put into power for the express purpose of fighting Socialism, permits this scandal to continue. Mr. Baldwin and his colleagues do not seem able to grasp the fairly obvious fact that one cannot effectively fight an enemy by borrowing his weapons and using them against oneself.

Sesqui-Centennial Exposition.

Architectural and Art Features.

Philadelphia.—The architectural scheme in which the buildings are to be placed will form an appropriate setting. As the "White City" was evolved out of an architect's vision at Chicago, so the "Rainbow City" will emerge in Philadelphia. The buildings will be tinted in pastel shades laid on the stucco. The whole effect, while not lacking in vitality, will be soft and restful to the eye. The effect will be somewhat that of the vari-tinted buildings of the tropics.

Exposition architects have developed a style of treatment of buildings which is unique to the Exposition. Their concept has been that the evanescent structures they deal with should express strictly contemporary trends in design. They have, therefore, taken the very latest individual development in architectural style, that of the "set-back" structures, now fairly familiar in present-day office buildings in large cities where zoning laws exist. They have used some of its prevailing elements in formulating the style which they have evolved. Their task was not an easy one since exposition buildings are always low, and it is in the upper heights of modern sky-scraper buildings that there are embodied the most characteristic features of the style they imitate. They have succeeded, however, in working out a novel treatment which cannot fail to interest those who are sensitive to such phases of endeavour in the arts.

Fine sculpture and statuary and imposing landscape decorations will play their customary part. As the visitor enters the grounds he will be confronted at the main portal by two pylons 55 feet high on either side, which will be surmounted by colossal figures called Heralds of the New Dawn, emblematic of the story of American freedom which is to be told.

Within a few steps after passing them the visitor will enter the area where architects, artists and landscape designers have made their principal contributions to tell in terms of their arts the central patriotic motive underlying the Exposition.

At the head of the Court of Honour between the Liberal Arts and the Agriculture buildings stands the imposing Tower of Liberty, more than 200 feet high, and surmounting this is the Light of Independence. This tower can be seen from all parts of the city, and will appear when illuminated at night as a great silver shaft shedding its radiance over the entire Exposition grounds. This light commemorates the inspired vision of the founders of liberty, the Signers of the Declaration of Independence.

In the great court below, which has been designated the Forum of the Founders, stand the eight-foot portrait statues of the Signers of the Declaration. These statues extend around the entire court, and from the standpoint of American culture will be of great value as an educational feature. In the centre of the Forum of the Founders will stand a most unique group of sculpture. It represents Philadelphia progressive, driving forward under the inspiration of the Signers. From near this group the great Stairway of Nations leads downward into the Grand Plaza where stand the two heroic lions of Courage and Peace. They act as heralds proclaiming a newer and even greater democracy. Other decorative groups form an important part of the Stairway of Nations, and a great Colonnade of the States is to be the high point of the background to the great exhibit of American sculpture.

Every international exposition has brought together collections of painting and sculpture from the countries of the world, and this the Sesqui-Centennial International Exposition will also do. There will be special emphasis on contemporary art and work done within the last fifty years will have precedence, though sufficient examples of more primitive art will be shown to form the necessary historic contrast. In the arts, as in the industries, many changes have taken place, for painting and sculpture mirror the life of the age in which they are created. Many works of European artists will have a showing for the first time, and it is hoped that a representation of paintings by early American artists can be collected. Etchings, wood carvings, models and medals, engravings, lithographs and drawings will be represented, many of them from private collections.

The art of music will be adequately represented at the Exposition along with the graphic arts. Musical events of significance will be a prominent item in the general program. Ten committees of outstanding musicians have been arranging a program which contemplates in its scope opera, orchestral concerts,

performances of chamber music, organ recitals, appearances of vocal and instrumental soloists and choral festivals. During the last months of the Exposition this program will be augmented by the regular Philadelphia musical season.

The lighting is sensational in its scope and splendour. It is not confined to the Exposition grounds, but will embrace and draw into one unit the Philadelphia City Hall, the Art Museum on the "Acropolis" at the entrance to Fairmount Park, the Parkway, and the fountain in Logan Square. Behind the Art Museum fourteen super-power searchlights will be combined into an auroral display representing the greatest aggregation of light ever gathered in one spot in the world's history. It will consist of a concentration of 6,300,000,000 candle-power, and will be visible from as far away as New York, many miles out at sea and far inland. Aeroplanes will lay curtains of smoke in the beams, while coloured lights play on it with indescribably thrilling effect.

The tower of City Hall and the statue of William Penn surmounting it will be outlined by searchlights hidden around the building, and the whole structure will be bathed in a pink glow of light.

Southward toward the Exposition grounds a giant Liberty Bell, the height of a six-story building and containing 20,000 incandescent lamps, will span Broad Street, traffic passing beneath it. There will also be a special display in the grounds of the Exposition itself, and arrangements are now under way for installing illuminated fountains which were a feature of the Paris Exposition.

High Spots of the Exhibits.

As to the things which the visitor may see in the main exhibition palaces and those to be erected by foreign nations, states and individual industries, we are already assured of a showing which will make the Exhibition truly representative of progress in the liberal and mechanical arts in the last fifty years. A few of the high spots may be mentioned.

The Bell telephone, which was first put into public use in the Centennial Exposition in 1876 will be shown in its progress since that date, its latest allied development, the system of sending pictures by wire, being exemplified.

The Diesel engine, one of the significant contemporary advances in power engine construction, will be represented by the greatest assemblage of its examples in history, including Diesel-driven and direct-connected engine generator sets ranging in size from 350 horse-power to 1,000 horse-power. All phases of advancement in machine and electric transportation fields will be shown by the great manufacturers in this country.

The oil industry will sink an oil well and show every phase of oil production from the ground up. The largest steel manufacturers will illustrate their industry from the treatment of ore through the last stages of fabrication. The distinctly contemporary development of sanitary and home economics as exemplified in the great industries will also show what has been done in this field up to date.

The moving picture industry finds in the Sesqui-Centennial International Exposition its first opportunity for showing the nation its methods and growth since it has reached its present state. The site has already been selected on which a local Hollywood will be erected, and arrangements have been made whereby the great stars of the cinema world will come in relation from various parts of the country to make actual pictures before the eyes of Exposition visitors, who later will see these pictures in completed form on the screen.

Other notably interesting features which should be mentioned here, although some of them have been touched on before, will be a duplication of a part of old High Street of Revolutionary days in Philadelphia, now Market Street, showing the homes of Jefferson and Washington and other notables, which will be erected by the women's committee of the Sesqui-Centennial organization; an exact duplication of Sulgrave Manor, the ancestral home in England of George Washington, and Mount Vernon, the Washington home in Virginia; the Taj Mahal building, housing the Indian exhibits; a Treasure Island five times the size of the one which formed a feature of the Wembley Exposition last year in England; a Rumanian village; a Moravian farm-house; a gathering of Plains Indians for "The Last Great Council"; a duplication of the Temple of King Solomon; a street from old Vienna; and reproduction of the Marketplace of Nuremburg.

The justification for the expense and effort involved in any international exposition is that it constitutes a swiftly-assembled educational institution of world-wide scope. In its exhibits it epitomizes the productivity of man brought directly down to date. This aspect of the

Sesqui-Centennial has been kept to the fore in all the planning.

The Palace of Liberal Arts and Manufactures will show the visitor the latest advances science has made in its ever-widening scope and vision and its multiplying contacts with daily life, and here the spectator may see the steps medical and surgical science have taken to safeguard health and heal sickness. Books and publications will be manufactured as he watches. He will see in operation things that hitherto have been a secret to him, processes of manufacture concerning which he will learn for the first time. The operation of delicate instruments of precision that perform wonderful calculations will be shown. Modern methods of communication which have revolutionized the life of the world and brought the peoples of the earth into almost instant connection with each other will be exhaustively displayed. Telephone, telegraph, wireless, radio all will be represented. The most modern advance in methods of communication, the art of transmitting pictures and photographs by wire, will be displayed.

The Palace of Agriculture, Food and Dairy Products, the second of the huge exhibit buildings, will contain all that pertains to the feeding of the human race, from the preparation of the ground and the eventual harvest to the appearance of the product as an edible commodity upon the market. In this Palace will also appear gorgeous displays of flowers and fruits and all that is involved in their culture, forestry exhibits, the culture of vines and of vineyards, methods of preparing and cooking foods, and a multitude of activities allied to these. Such industries as the growing of tobacco and its preparation for the market, the process through which sugarcane is passed before it evolves as the sweet which graces our tables, the transformation of wheat and other grain to a loaf of bread, these and other processes of absorbing interest will be set before the view of spectators. Not only the modern methods will be displayed, but those of other times will be contrasted with them. Beside the oven of baked clay used by the semi-savage will stand the vast kitchen of a modern restaurant. The sharp stone insecurely fastened to a stick by the first tillers of the soil will see its evolution into the great farm machines which do in an hour what it took the early ploughmen a month to accomplish.

The Palace of Machinery, Mines, Metallurgy, and Transportation will typify the monumental achievements of modern engineering. The United States will show in this building the best of its gigantic slaves of steel. The powerful engines of all types that do man's bidding will here have a greater representation than ever before. Diesel engines will be assembled, tracing their growth to the present monsters of irresistible power. Marine engines, locomotives, steam turbines, great electric engines and whizzing dynamos, the whole evolution of power from the mill-wheel to the new device that was invented yesterday will be unfolded before the eyes of spectators. The uses to which this vast supply of energy is put will also be represented. The development of the automobile will be portrayed. Modern means of locomotion by rail, by water, by air, and its equipment, will have its place, while the direction experiments in air transport are taking will be set forth in the display of aircraft, engines, new devices and appliances.

The Palace of Fashion will house acres of exhibition space crowded with textiles gathered from the looms of the world, with precious metals and curious gems fashioned into jewelled ornaments, with rare perfumes in the air. In the centre of the massive octagonal building upon a circular revolving stage the pageant of fashion with living models in colorful array will be enacted in view of an audience of 10,000 persons seated comfortably in the surrounding amphitheatre. In the exhibition booth everything in textile manufacture from the raw material to the finished product will be on view. Not only textiles and wearing apparel but the process of their manufacture will have place in this building. The art of weaving upon hand looms and the gigantic machinery used in present-day mass production will be contrasted. The most representative display of wearing apparel ever assembled will be presented. These will be supplemented by costly furs, by articles manufactured of leather, by tapestries and the products of the upholsterers' trade. World-famous dealers in jewellery and precious stones, in articles of personal use, in carpets and tapestries will add to the profusion of the display.

It is well to remember that water cannot extinguish fire caused by burning oil. It is a good safeguard to keep a box of sand or dry earth standing in the house ready for fire caused by overturned lamps, or where oil catches fire.

Indian Economic Notes.

Water Divination.

In connection with the appointment of Major Pogson as Water Diviner to the Government of Bombay, the criticism has been made that before making such an appointment Government should have investigated the possibilities of certain types of water-finding machines, notably, the Mansfield and the Schmidt. In fact, these machines have been in the possession of Government for a number of years and have been the subject of much experimental work. The results of the various trials and tests of these instruments were published some time ago in a Bulletin issued by the Agricultural Department. These machines do undoubtedly indicate the presence of underground currents of water, but they have this disadvantage that they are unable to indicate the presence of any underground currents at a lateral distance of more than 30 feet from the instrument. Moreover, a strong current at a great depth will give similar readings to a weak current at a shallow depth. To investigate the possibility of an area of any sort entails considerable time as it is necessary to take four readings on successive mornings and evenings at different spots, and each reading lasts for half an hour. The machines can only be employed during certain hours of the day and when the sky is unclouded. Government are, however, continuing their experiments with these machines, and in order to endeavour to ascertain the true meaning of the various oscillations of the needle which is the indicating component of the instrument, a machine has been set up on various sites first located by Major Pogson and the readings compared with the actual results obtained by excavation. It is hoped that by exhaustive collection and study of such data it may in time be possible to gain more definite indications of depth and quantity from the readings obtained.

For water divination to be of real practical use it is essential that wells should be sunk direct on to flowing water and the success of Major Pogson is due to his being able to locate these underground currents and he is not restricted, as are the instruments, by the question of immobility. He has also evolved a system of calculations, based on observation and experience, which enables him roughly to approximate the depth of the currents. The extent of Major Pogson's success may be gauged from the following figures:—In the "trap" districts of Ahmednagar, Sholapur and Bijapur, where water scarcity is most felt, 53 wells have been excavated or are in course of excavation on sites recommended by Major Pogson. Of these, four have not yet reached the depth at which it was predicted water would be struck. In forty-seven cases water has been struck, while in two cases water has not yet been struck, although the depth has reached that predicted. As regards the suggestion that the success of the Water Diviner is due to particular local knowledge, it may be mentioned that Major Pogson's work has been done in the Nilgiris, the Deccan, Central India, Gujarat, Rajputana, the North-West Frontier Province and on the sea coast.

Indian School of Mines, Dhanbad.

The Government of India intend to open the Indian School of Mines at Dhanbad, Bihar and Orissa, on the 1st November, 1926. The School will provide high grade instruction in Mining Engineering and Geology and will be open to students from all parts of India and Burma. It will award certificates in Coal Mining, Metalliferous Mining and Geology on the satisfactory completion of a three years' course and the diploma of Associateship in Mining Engineering and Geology after a further year's course. All students will be required to reside in the hostel attached to the School. Candidates for admission should be under 22 years of age and must have passed the Intermediate Science examination of an Indian University or an examination of an equivalent standard. Admissions will be made on the results of an entrance examination, which will consist of written papers on English Composition, Mathematics and Elementary Physics and Inorganic Chemistry. Candidates desiring to appear in this examination at Dhanbad will be required to pay a fee of Rs. 10. Fifty students will be admitted to the School this year. A certain number of admissions will be reserved at the School for each Province, the remaining admissions being open to the best candidates without regard to domicile. Applications for admission must be made on the prescribed form, accompanied by educational and conduct certificates and a medical certificate in the form prescribed. Copies of these forms can be obtained from the Principal, Indian School of Mines, Dhanbad,

and applications must reach him complete in all respects not later than the 15th July, 1926. The Government of India have decided to award the following scholarships tenable at the School for three years :—(i) One scholarship of Rs. 70 per mensem ; and (ii) Two scholarships of Rs. 40 per mensem each. These scholarships will be awarded on the results of the Entrance Examination of the School and one of the scholarships will be reserved in the first instance for students from the North-West Frontier Province, Baluchistan, Delhi and Ajmer-Merwara. The scholarships will be payable for nine months of the School session in each year. A Prospectus of the School giving detailed information relating to admission, etc., is in course of preparation and when published will be placed on sale at the Government of India Central Publication Branch, 8, Hastings Street, Calcutta, and at the office of the Principal of the School.

The Cash On Delivery System.

The British public are not taking to the new Cash on Delivery system very kindly, and it seems a moot question whether its introduction will prove a success. It has been pointed out that in India, where the system is known as Value Payable Post, it is very popular, and such defects as there are in it are confined to people who order goods for which they find themselves later unable to pay, and to dishonest traders whose sole stock in trade consists of an attractive catalogue of articles which are purchased in the local bazaar and re-sold at a 100 per cent profit. The only other objection to purchasing goods by V.P.P. in India is that there is no guarantee of securing the specific article ordered, as inferior substitutes are often sent under the explanation "nearest we have in stock at present". Having once opened the parcel the receiver must accept and pay for it whether he likes it or not, though of course he can return the goods to the firm at his own expense. These difficulties have not yet had time to impress the British public, and the chief opposition to the C. O. D. system has been coming from the retail tradesmen who say that they are threatened with extinction because everyone will order their goods from the large business houses in the big cities of Britain. Undoubtedly one reason for the success of the V.P.P. system in India is the vast area of the country, making it impossible for people in one part of the country to journey several hundreds of miles to shop in other cities, as is frequently done in England. Nearly all villages and towns in England are fairly close to a large city, and the task of journeying there to "shop" is not tremendously difficult, but it certainly is in India. This fact may yet contribute to the failure of the C.O.D. system in England. In any case the retail traders are damaging their own interests by opposing the system. People will go wherever they can get the goods they require, and it is up to the small traders to stock those goods and advertise them. If their service is efficient they will soon win public favour, says *Daily Gazette* of Karachi.

The Beggar Problem.

So hopelessly intermingled with the ever delicate question of religion the beggar problem in India has so far defied the best efforts of those who have endeavoured to solve it. Considering that in Great Britain, even after centuries of experiment, the vagrancy laws are still held to be far from ideal, those whose duty it is to work at a solution must not lose heart, though the difficulties to be surmounted appear almost insurmountable. Bombay, one of the principal sufferers from this dire social disease, has now before it the report of its Criminal Tribes Settlement Officer, who has evidently drawn inspiration from the Report of the British Royal Commission on the Poor Laws which was submitted in 1919 and also from various Continental practices, more particularly those of Belgium and Switzerland. For the major and more urgent problem of Bombay city he proposes the institution of a beggar settlement in its vicinity and, for the Presidency as a whole, assistance from charitable sources, the present private organizations being improved by the establishment of Councils of Social Service. Labour colonies, such as are suggested for Bombay, have been tried in Belgium and Switzerland with a substantial measure of success. How far they will work in India, however, where beggary is an honourable profession, and where those who practise it are legion, it is difficult to estimate, says the *Pioneer*. However, other and greater problems have been tackled with success and a Presidency which could with equanimity visualize the reclamation of land long lost to the sea should not hesitate to adopt any scheme which holds out the prospect of ridding its streets of its hoards of malformed humanity.

That course of modern industry—the limited liability company.—*Mr. M. R Mainprice.*

Topics in the Journals.

Local Government Abroad.

An important contribution to the comparative study of local government is contained in the book which Mr. G. Montagu Harris, M.A., has just published.* It will be recalled that soon after the appointment of Lord Onslow's Commission on Local Government the Colonial, India, and Foreign Offices were requested to undertake an inquiry of an authoritative character into the various systems of local administration in operation in the Dominions, the Colonies, and abroad. The superintendence of that special task was placed, says the *Municipal Journal*, in the competent hands of the author of the work now before us. In that capacity Mr. Harris was responsible for extensive memoranda laid before the Commission. The material thus made available serves as the basis for this volume, while, so that the work should constitute a real conspectus of current local government, there is added a summary chapter on the English system and its variants as applied in the rest of the United Kingdom and Ireland.

The Problem.

The problems which concerned the speculative mind of Alexis de Tocqueville have no place in the work of Mr Harris. As society develops from a stage where individualistic assertion is the paramount aspect, towards a higher condition where collective welfare is the chief and common pursuit, it would seem to be determined by the very nature of national government that the central governing organ of the State shall take a greater part in administrative affairs, side by side with expanding freedom for local authorities. On that question as on the philosophy of administration in general, Mr. Harris writes barely a sentence. His mind, at least as it is represented in this book, is of that severely practical order which states facts and leaves the formation of the principle which controls their movement. Generalization is the business of political science after the facts are collected and classified. It is the collection and classification that Mr. Harris has performed so well. For an elucidation of the principles beneath, and for any inquiry as to the probable course of future development, the reader must go elsewhere.

Revenue and its Collection.

It was inevitable, since the main body of the book was prepared for submission to a Royal Commission, that outstanding prominence should have been granted to the financial methods which local authorities abroad have adopted for the raising of revenue. The methods of thirty States and Dominions are passed in review. Their perusal leads to the conclusion that the boundaries of local government finance are changed from time to time, as the economic position of a country changes. Thus the 44,000 communes of France, subject to the approval of the superior Departmental authorities, of which there are 90, can levy *octroi* duties on food entering the town.

The persistence of this form of impost in France—a method of local taxation at one time common throughout all feudal Europe—is generally instanced by the student of history as an example of the laggard character of change in countries which are revolutionary by temperament and constitution. How far the racial temperament determines such devices for the creation of revenue is a petty controversial point that we glance at and abandon.

For our purposes it is more important to show that the *octroi* duty can only be retained completely in a country that is self-sustained so far as the prime essentials of life are concerned. If the Manchester Corporation taxed every load of wheat, coal, tea or sugar that made its appearance at the city boundary, the cotton-goods manufacturers would be enormously handicapped in their efforts to sell thier wares abroad so that England should be fed. Were England as self-sufficing as France even yet remains, the case would be altogether different. If Manchester calico were all absorbed in the Eastern countries, no particular harm would result if Lincoln red wheat paid a few pence per bushel to the Manchester City Treasurer upon arrival. Manchester's rates might be a trifle lower: and Spalding would retaliate by an *octroi* on cottons. But as the goods would no longer be sold in face of the intense competition of the world market, this archaic mode of obtaining a municipal revenue would do no special mischief. France is still in a condition where such devices are possible. Her local government is not the system of an industrial community; it follows the methods of an agricultural and peasant State.

Additions to Taxes.

A source of revenue in France, contributing in recent years even more than *octroi* duties, is derived by the system of *centimes additionels*. The system is peculiar to the Gallic countries: in the Teutonic group, modes of assessment both for income and property have been devised which make local rates less contingent upon the weight of the taxes imposed by the central government. The Gallic principle may be said to consist in the right of each commune or each Department to add, for its own purposes, a certain percentage to the "direct taxes" which the French Government requires and always finds great difficulty in increasing.

With a precision and attention to detail which has marked the course of the French central breaucracy since the days of Richelieu, and which neither the Revolution nor Napoleon disturbed, the general law specifies which of the national taxes may be increased by the additional charge for local government. They are the land tax, the land and buildings tax, the tax on the rentals of houses and apartments, the door and windows tax, and the license tax on trades and professions.

That enumeration is sufficient to suggest how far ahead is our own method of taxation and rating, imperfect though our British system may still remain. In each case the maximum number of ordinary *centimes* which the commune or Department may add

*"Local Government in Many Lands," by G. Montagu Harris, O.B.E., M.A. P. S. King & Son, Ltd., London. Price 15*sh.*

is fixed by the general law. A corresponding regulation governs further addition to the central taxes, which may be imposed under conditions to meet an insufficiency of revenue. Determined in each year by the annual Finance Law, the maximum can be exceeded by permission of the *perfect*, presumably after highly detailed negotiation with the Ministry in Paris

AUTHORITY IN THE REPUBLIC.

From whatever aspect French local government be regarded—and broadly the same rule applies to all the Gallic or Latin countries—local bodies are hemmed in by a network of regulations, not so rigid that variation is impossible, but nevertheless of such strength that activity is limited. At the same time there is ample room for the arbitrary or whimsical *perfect*, a sort of permanent representative of the supreme Government, to add his peculiar view to the varying stipulations of the State. Grants-in-aid are given for many purposes—but it is the report of the *perfect* that finally decides the grant. In the matter of loans both communes and departments can borrow for periods not in excess of thirty years, provided that the loan charges are not greater than the allowance for additional *centimes*. In other words, the annual legal charge in respect of capital expenditure is confined within the narrowest possible limits. In comparison, the local authorities of Britain enjoy a vast measure of freedom. It is singular that the type of English municipal reformer who desires to curtail the freedom of our local authorities could find, if he were to seek, all his arguments already applied in Revolutionary France.

THE GERMAN SYSTEM.

It is a matter for profound regret that it is not yet possible to make exhaustive comparison between the reconstructed local government of Germany, so largely brought to pass since the close of the war, and the methods in France, which remain substantially unchanged by the great upheaval. For the most part the principal interest attaching to local government in the Teutonic group of countries surround the form and composition of the administrative body. Before the war a local income-tax was in fairly general operation throughout the German States. Since the legislation of 1919 the tendency is towards the appropriation of all proceeds from income-tax by the Government of the Republic Here again, this development is the natural consequence of the relative decline in central revenues derived from duties on imported goods and materials. Just as England was forced to adopt an Income-Tax when our fiscal system ceased to depend upon customs duties, so Germany, as that country grows as an industrial nation selling abroad, is compelled to follow precisely the same course.

Considerable changes have been made in the form of the German local authority as a logical consequence of the Weimar Constitution of 1919. At that time a tide of strong democratic sentiment was in possession of the German mind, and it seemed for a while that the status and power of the burgomaster would be greatly modified. But in Germany now, as everywhere in Europe in recent years, there is doubt and much questioning as to the final utility of representative institutions.

DOUBTS AS TO DEMOCRACY.

In quarters where the principles of Fascism are detested as heartily as the principles of Bolshevism—in reality the principles are identical—many are prepared for the sake of the ensuring achievement, to regard with a friendly eye the vesting of considerable authority in the competent and highly trained personality. Such appears to be the view of Germany today, according to the classification of its local bodies which Mr. Harris has essayed. At the end of 1924 a review of the systems of town government showed, broadly, that six systems were in operation. On the whole, the system then making headway was the burgomaster system of Prussia, Hesse, and Anhalt which endows that officer, centrally appointed or approved though paid a salary from local funds, with wide executive powers It is striking testimony to the general value of municipal ownership that under the burgomaster system, where expert business capacity in relation to local government is at the highest standard, the operation of public services by the local authority is extensively developed. As Mr. Harris observes, many of the German towns own a considerable proportion of the land on which the town is built and derive a large part of their revenues from land and building rents.

Touching the problem of concentrated authority, we turned with expectation to Mr. Harris' statement of the results accruing from the operation of the referendum, the initiative, and the recall in the United States. The adoption of these powers for retaining control in the electorate while vesting the representative with executive rights, is at the pleasure of each separate State. It is in the southern and western States that the referendum and initiative are more generally embodied in legislation. The recall seems to be honoured more in theory than in practice. As it is applicable to elected officers rather than elected representatives, and as it is seldom put into operation, we are entitled to assume either that the officers are wholly good or that the American electorate, with all its protested love of constitutional liberty, is stubbornly apathetic like ourselves. Unfortunately there is nothing in American practice throwing light upon the question whether it is sound policy to place power in a burgomaster's hands.

Mr. Harris will perhaps some day give to the students of local government his reflections upon the facts recorded in this present volume. A discussion from his pen of the principles which operate to make municipal life one organic whole should be of inestimable value. By training, wide knowledge, and a taste for the problems of government, he is fitted for above the attainments of many considerable men for the writing of that book.

Meanwhile, this volume, so well produced by Messrs. P. S. King & Son, is an admirable and exhaustive contribution to the study of comparative local government. Full of facts, it yet retains variety: it presents a striking picture of the attempt on the part of mankind to make of life a scheme of equal rights and ever-expanding liberty. The author deserves credit for an excellent piece of work.

Banking in America.

With regard to the controversy about the establishment of a State Bank in India, *Cotton and Finance* refers to a discussion in the U.S.A. over a new section added to the McFadden bill now before the United States Senate comprising miscellaneous banking legislation. This section would provide for the perpetual charter of the Federal Reserve Banks—"until dissolved by Act of Congress or until forfeiture

of franchise for violation of law." A somewhat organized agitation against this tail of the bill, suddenly thrust upon the people when the bill is ready for passage, has grown up. The chief grounds of opposition are as follows :-

1. That the Banks should be permitted to base their note issues only upon mercantile paper, so that note circulation will be adjusted to trade needs, and not upon gold, "thereby," as the chief critic of this policy, the *Financial Chronicle* says, "furnishing the basis for promoting speculation of every conceivable type".

2. That the "open market" operations of the Banks ought to be restricted. Quite recently Dr. B. M. Anderson, Jr., Economist of the Chase National Bank, accused the Banks of "forcing money into the market which had no real need for it," of keeping the rediscount rate below open market rates and so tempting the member banks to borrow and relend profitably, generating a prolonged stock market boom and bringing about "a situation that is not conducive to safety".

3. That the Federal Reserve Board has attempted to maintain without authority, a stable level of prices through manipulation of rediscount rates and "open market" operations.

4. That the Banks should not perform services that compete with the services offered by member banks, or that they should charge for such services if compelled to render them, instead of giving them gratuitously. This criticism has arisen principally among the member banks.

5. That the Banks should be barred from international business, a criticism arising from the credit extended to the Bank of England by the New York Federal Reserve Bank.

6. That the management of the Banks made the deflation of 1920 and 1921 unnecessarily severe and prolonged and that their preachments upon the necessity for deflation increased the demoralization and depression of the period.

7. That the Banks have been unduly extravagant with the public funds, a criticism urged by John Skelton Williams some years ago, but largely forgotten now.

8. That there is no authority in the Federal Reserve Act for the investigations they conduct and the reports and business advice that they issue.

9. That they have an arrogant and truculent attitude toward the public, toward non-members in trying to induce them to join, and in their enforcement of the "par collection" system.

Educational Reconstruction.

There appears in the April issue of the *Young Men of India* a short, instructive and thought-provoking article on "Educational Reconstruction," in India, from the able and facile pen of Mr. S. V. Ramamurti, M.A., I.C.S., of Madura. After passing severe strictures on the system of Education obtaining in India today—with special reference to University Education—the writer makes certain constructive proposals for improving the present state of affairs. Mr. Murti deals with University education in its relation to national life and begins by saying that in India "the education of the few is paid by the uneducated many" who get precious little in return for the money they pay ; and goes the length of saying :

> Abolish our Universities and yet our village life will remain unaffected. For, the books the villager reads or hears are not made by our Universities and their products. The social and moral life the villager leads is unaffected by the knowledge of our Universities....There is something radically wrong when the villager pays for what does him no good.

The University graduate comes in for a good share of the strictures of the writer, who is thoroughly dissatisfied with and much regrets the oppressive western influence working in the educational institutions, greatly to the detriment of the best interests of the country. Says he of the graduate :

> Have our University graduates done anything to lessen the ignorance, poverty and dirt of the villager? They cannot, because they carry a load of alien knowledge, neither the substance nor the form of which is assimilable by the villager. They cannot lessen their poverty, because the very large majority of our graduates do not create wealth but only seek to guard it. They have not helped to remove the dirt in villages because they have not acquired either the power of organization, or the moral enthusiasm, or the creative ability, with which disintegration, physical or moral, can be stopped.

He next examines the individual products of the Universities and sums up by saying :

> Our Universities, instead of developing artists, have been schools of intellectual coolydom.....The majority of our graduates are absorbed in the subordinate ranks of Government Service....A graduate should be prohibited from becoming a clerk or a clerk's equivalent.

Secondary Education, continues the writer, has been "a school for the inferior mental artizan", without absolutely any training being given in other kinds of artizanship, and Primary Education is practically confined to the 3 R's, and in the words of Mr. Murti, gives its votaries "little knowledge and no culture". Mr. Murti then makes a couple of constructive proposals to counteract the existing deficiencies in the educational system. He says that in the primary school should be taught two books, one dealing with a little of each of the different sciences of Physics, Physiology, Hygiene, Astronomy, Meteorology and so forth, and the other dealing with what may be called the "emotion of history," giving "an idea of what India has stood for in the centuries, what it is driving at, what is the ideal it is seeking to achieve."

Those two books may be called the Book of Matter and the Book of Life. They should convey knowledge and culture in as simple a form as mother's milk.

The second proposal, though constructive and useful in essence, reads rather quaint in detail. Essential as is the writer's prescription for the graduate, it somewhat smacks of impracticability. He suggests intellectual conscription for India—a good thing, indeed, if the suggestion were followed by practical proposals for carrying it out. Let the writer speak for himself.

Next, to secure a continuity of the educational development of villagers and a harmony between the life of the masses and the classes, I propose that every graduate, after he passes his examination, should serve a period of probation for six months. His business would be to go about villages in a prescribed area with a small bundle of clothes, he could walk from village to village and stay a few days in each, telling the villagers the essence of what he had learnt. At the end of the period he should present to the University an account of what he had taught and what he had learnt..... It is in the fitness of things if India conscripts the intellects of her citizens for maintaining and extending her intellectual and cultural possessions.....Let our graduates go out as *Bhagavatars* and *Bhikshus*, *Sanyasins* and *Fakirs*, not only of religion and art, but also of science. Then shall there be a like knowledge spread over the whole nation, which shall strengthen national unity and enable India to fulfil herself.

Our Towns—their Advantages and Evils.

"Urban Life and Economic Progress" is the title of a very interesting contribution to the March issue of the *Calcutta Review* from the pen of Mr. B. Ramachandra Rau, M.A., L.T., of the Calcutta University. The article is a valuable contribution to the solution of a problem which is everyday becoming more and more acute. As the subject is one of universal importance, we shall refer to it at some detail.

The rise of our great towns, says the author, is a recent phenomenon. Sir William Hunter points out that, as a nation that had the talent for selecting sites for big commercial cities, the English created a new industrial life for the Indian people, with what results we shall presently see. First of all,

"the physical proximity of the people residing in the towns involves an enormous economy in the cost of communications, which means large accessible markets, which in their turn lead directly to more highly specialized form of production and yet further economies, which are largely reflected in the huge sight rents of densely populated areas."

Then, as H. E. Sir William Marris says, "they (towns) should be considered as centres of the industrial, intellectual, economic and political life of the country, their influence and example tend to radiate and affect every part of every country and everything that conduces to their well-being reacted in some measure to the benefit of the rest of the province." And, Prof. Giddings says, "The city produces population, energy and original ideas- the raw materials of social life— as the country produces food and the raw materials of manufacture. The city forms the social mind and sends forth to every community and even to the isolated homestead stimulating currents of thoughts and of moral enthusiasm. It quickens social instincts and awakens interests in men and women whose lives were monotonous and hard." In fact they are the creators of civilization.

Now to the other side of the picture. Nothing on our Planet is unmixed good and towns are no exception to this. The modern city is a repository of all kinds of evils, some of the grave ones among which are set forth in lucid detail by Mr. Rau. Many years must elapse, he says, before our urban population in India can come up to anywhere near that of the countries where city-crowding, insanitation, demoralization and degeneration of physique have created a need for people to return back to the land. He also notices that "absentee landlordism" is receiving a powerful impetus—thus hampering the economic progress of the village. Yet another not altogether negligible feature of our town-life is 'the marked preponderance of the male population over the females". How this affects the morals of the labouring classes can better be imagined than described.

".....the employees lead an unnatural life increasing the scope for irregular sexual conditions."

But these are not all the evils of town-life. Proceeds our author :—

"As the population of the towns is increasing, house rent has fast been mounting up with the necessary result that overcrowding of houses is resorted to and the death rate and the rate of infant mortality have also tended to increase."

When our towns have grown without any plan, the evil of overcrowding has resulted. Besides,

"prolonged stay in towns tends to create disinclination for travel and deadens one's curiosity as regards remote regions and their inhabitants, thus making it unfavourable to sustained and concentrated effort. The townspeople have lost their communal or co-operative sympathies and look to the activities of the State to supplement their deficiencies arising out of their own inability."

The drink evil and the opium menace are not less serious in their consequences, leading to chronic constipation and intellectual weakness. And,

"the loss of moral stamina involved is a greater evil than the loss of health. And as a result of these bad habits and the poor physical, vital and social

conditionings in town-life, the formation of character is being adversely affected."

What next? Surely these unhappy circumstances have to be checked -but how?

THE REMEDY.

"Towns are the centres of social intelligence, initiative and endeavour" and as such, though they abound in all kinds of vices of a grave and too varied a nature to permit of easy solution, the problem must be faced boldly and in a practical manner.

"The squalor, filth, pollution, crime, pauperism and destitution have to be checked by public education, awakened social conscience and enlightened State policy. The townspeople should have a proper physical, moral, educational and social environment so that robust manhood may be created."

Then the problem of vice and Social evil must be effectively dealt with by

".....restoring the sex balance of the cities."

All this must and can be done only by the combined resources of the State and Municipal bodies. The State should undertake a constructive scheme of town-planning classifying areas into business and industrial purposes which will tend to stabilize real estate values, promote orderly building, enhance beauty and develop local self-consciousness and civic responsibilities on the part of the people. And the Municipalities should take the initiative in building houses placed amidst good surroundings with a plentiful, carefully-regulated water-supply, a perfect system of drainage, a liberal supply of medical help, sanitary places to sell wholesome foodstuffs and maternity and welfare centres, to ensure the growth of strong and sturdy manhood and womanhood.

"It is the bounden duty of the State to ensure the conditions of good life to each and every citizen."

For,

"if this is unaccomplished a healthier and active race cannot be developed out of the present enfeebled stock of population."

And,

"a revitalized citizenry is essential for securing economic progress."

What is urgently required, however, is a healthy co-ordination of town economic forces with rural ones. For,

"if national freedom, political or economic, is to be obtained in this country it is only by the discontented peasantry allying themselves with a town working-class people that real progress can be achieved."

Wanted—a Whiter Empire.

The following from a British journal has been suggested as "One Way to End Home Troubles": -

How many people know that there are six times as many coloured subjects of King George in the British Empire as there are white?

It seems astonishing; but it is true. Nobody would grudge the millions of coloured folk in India and Africa their citizenship of the Empire, but it must be admitted that their overwhelming preponderance in some of the richest areas of the world is one cause of unemployment at home and the high prices of bread, meat and other necessaries of life.

It works out this way: Everyone knows that Britain is a manufacturing nation. Much of our raw material comes from overseas and practically all our foodstuffs. We pay for them by the things we manufacture, and if it should happen that nobody wanted our woollen and cotton cloths, our cutlery, our bicycles, our needles and anchors, we should be a bankrupt nation. It is because there is less demand for our goods since the war that we are not so well off as before. Our European neighbours are too poor to buy from us or are learning to make their own cutlery and bicycles.

Britain's best markets just now are the Dominions; New Zealand, every person in which buys every year £13 4*s.* 5*d.* worth of goods from us, is our best customer; Australia, with £10 19*s.* 6*d.* each person, comes next; while India, with only 5*s.* 9*d.* each person, comes last on the list.

What is wanted, therefore, to set the mills of Yorkshire, the foundries of Newcastle, and the factories of Birmingham, Leicester, Coventry, and elsewhere once again working hand over fist is to people the undeveloped spaces of the Empire, the great waste-lands in Australia, Canada and Rhodesia, with real British stock. These are the people who would buy our manufactured goods from us, as the figures relating to Australia and New Zealand given above clearly show.

In all Australia's wide spaces there are only twenty settlers living in the same area as is made to support 750 people in Great Britain! Here we are overcrowded while Australia is anxious for settlers. The two cities of Melbourne and Sydney alone account for nearly one-third of a population whose present cultivable fringe, it is said, could accommodate all the countries of Europe with the exception of Russia!

If we could people these wide areas with settlers of British stock, what prosperous markets we should possess! And these in turn would supply us with much that we now buy from foreign countries. For every £100 we spend "in the family" we spend £231 abroad.

PEOPLE THE EMPTY SPACES.

We took from foreign nations in 1924 bacon and hams to the value of 34 million pounds; beef, 24 millions; butter, 23; eggs, 12; wheat and flour, 34; cotton, 73; and wood and timber, 22. Thus we have eight commodities bought from foreign countries at a cost of £222,000,000. All of these could have been produced within the Empire. And the same may be said of dozens of others, from margarine and mutton to wool and cotton, and from boots and shoes to paper and leather. Our total imports from foreign countries is nearly £1,000 millions a year.

Only about £200 millions' worth of goods was bought by the Dominions in return from us.

If enough white people could be planted in the Dominions to buy as much from us as they sell to us, and enable us to buy nearly all we want within the Empire, the cost of living would go down to pre-war rates again, there would be work in plenty for all, our debts could be paid in no time, and from steel magnate to newsboy we should all be as happy as kings!

Mysore Economic Conference.

Board of Agriculture.

The following is a summary of the proceedings of the Sixth Meeting of the Board of Agriculture held in the Chamber of the Second Member of Council on Saturday, the 19th December 1925, at 8-20 A.M., with Mr. K Chandy, B.A. (*Chairman*), in the chair.

The Secretary read for the information of the Board (i) G. O. No. I. & C. 1495-8- A. & E. 227-24-11, dated the 29th August 1925, sanctioning the appointment of a Senior Sericultural Inspector for a period of one year for work connected with the development of Sericultural Co-operation, and the grant of loans not exceeding Rs. 400 to each of seven sericultural co-operative societies to be started for the purpose, and (ii) letter No. R.O.C. 313--H.C. 128 of 1925-26, dated 3rd December 1925, from the Director of Agriculture stating that the following progress had been made so far in the matter of promoting sericultural co-operation :--

(*a*) The appointment of a Senior Sericultural Inspector, and the starting of six sericultural co-operative societies at important centres such as Malurpatna, Closepet, Chakkere, Mangalvarpet, Magenhalli, and Sidlaghatta.

(*b*) Organizing a scheme for the development of seed supply and aided grainages to meet the increasing demand for disease-free seed.

The agenda for the day consisted of the resolutions of the following Sub-Committees :-

(i) Sericultural Sub-Committee, dated 29th October 1925.

(ii) Live-Stock Sub-Committee, dated 2nd November 1925.

(iii) Agricultural Education Sub-Committee, dated 3rd November 1925.

(iv) Rural Development Sub-Committee, dated 2nd December 1925.

Resolutions of the Sericultural Sub-Committee were taken up first.

Organization of Taluk, District, and Provincial Sericultural Associations, and the starting of a Conditioning House.

The Sub-Committee has recommended the formation of Taluk, District, and Provincial Sericultural Associations and a Conditioning House attached to the Provincial Association, and adopted with some minor alterations a scheme submitted by the Superintendent of Sericulture. After discussion it was resolved :--

"Resolved that the scheme for the formation of Taluk, District, and Provincial Sericultural Associations recommended by the Sericultural Sub-Committee be adopted with the proviso that attempts should be made to gradually withdraw direct official connection with the organization, and that as soon as possible, the Provincial Association should be permitted to elect a non-official President."

Mr. Quddus was however of opinion that the organization should be entirely non-official even from the beginning.

Finding Markets for Mysore Silk.--Mr. Abdul Quddus opposed the recommendations of the Sub-Committee emphasizing the desirability of deputing the Superintendent of Sericulture and a prominent silk merchant to important centres of silk trade in North India to investigate the extent and nature of the demand for silk in those parts and to organize a market for our silks. He said that no difficulty was being felt in finding a sale for the present output of silk in Mysore, and the question of extending the market might be considered if and when the output was increased.

Mr. Rama Rao observed that although even at present Mysore silk had a sale, it was not being sold to the best possible advantage. He said that fine Filature silk ought to fetch at least about Rs. 12 per lb., while what was being prepared just now was mostly coarse silk which was being sold at the rate of about Rs. 8 per lb. It was, therefore, necessary to improve the quality of our silk and find a profitable market for it.

Mr. Quddus said that this circumstance did not cause any loss as the quantity of cocoons required to prepare one pound of fine silk fetching a price of Rs. 12 per lb. would give about a pound and a half of coarse silk which would also fetch Rs. 12. He added that there was a ready sale in South India for coarse silk, and considering the difficulty there was in disposing of the fine quality, he was not in favour of producing large quantities of fine silks.

Mr. Rama Rao did not agree with the statements of Mr. Quddus. He said that improving the quality of our silk was very essential for the development of our silk industry. There was a great demand for fine silk in North India, only the Mysore merchants were not in direct touch with the markets, and hence the difficulty experienced in finding a sale for our stock of fine silk. He referred to the good business that was being done by Mr. F. L. Silva of the Bangalore Silk Filature, who had, during a recent tour in the North, studied the silk markets and was therefore finding it easy to effect a sale for large quantities of our Filature and Domestic Basin Silks. Information which a private merchant obtains on a small scale by an attempt of this kind benefited only the individual, but information gained by a Government Officer interested in the advancement of the industry as a whole, would be on a much larger scale and would be available to all the merchants in the State.

Mr. Hampiah said that fine qualities of silk produced round about Chikballapur and Sidlaghatta were being purchased by merchants from Hubli and Dharwar, who were in their turn selling the same in North Indian markets making very large profits over the transaction. Mysore merchants and Mysore growers were being deprived of a very large share of the profits which they would get if they had been in direct touch with the actual markets. He urged strongly for the creation of proper facilities for supplying the sericulturists with suitable machinery to enable them to increase the output of finer qualities of silk and for bringing them into direct touch with the markets, and for this latter purpose, he said, it was very necessary that a deputation should be sent out as recommended by the Sub-Committee. This would, he added, enable the industry to compete successfully with foreign silks, and it was, therefore, one of the surest steps of placing Mysore sericulture on a secure basis.

While agreeing with the opinion of the Sub-Committee about the desirability of trying to obtain a first-hand knowledge of North Indian markets for silk, Mr. Boranna was of opinion that the question could with advantage be deferred till after the formation of the Sericultural Associations as recommended in Resolution I.

Most of the other members were also of the same opinion.

The following resolution was then unanimously adopted :—

"Resolved that the question of deputing the Superintendent of Sericulture and a Prominent Silk Merchant to North India to investigate the extent and nature of the demand for Silk be deferred till after the formation of the Taluk, District, and Provincial Sericultural Associations as recommended in Resolution I."

Protection for Indian Raw Silk.—In reply to the Chairman's query as to how and to what extent foreign artificial silk was likely to affect our indigenous industry, Mr. Rama Rao said that the production of artificial silk was greatly on the increase. Against a total output of 69,000,000 lbs. of artificial silk last year, 159,000,000 lbs. were produced during the current year. Although artificial silks could be had for about half the price of natural silk, it was only about one fourth as durable as the latter and as such, it was economically not a good substitute for the natural stuff. Still, its advent into the market was sure to affect the interests of the natural industry as its comparative cheapness was sure to commend itself to the purchasers, especially of inferior qualities of silk goods. It was, therefore, in the interests of both the producers and purchasers of Indian silks that effective action should be taken against its unhealthy competition and this could be done by protective duties by approaching the Government of India for the necessary legislation.

Mr. Quddus also was in favour of approaching the Government of India for the necessary legislative action.

At the instance of the Chairman, the Superintendent of Sericulture agreed to prepare a detailed Note on the subject and bring it up for the consideration of the Board at its next meeting.

Sericultural Farm at Sidlaghatta.—The question of approaching Government for suitable grants for buildings and equipment connected with the starting of the Sericultural Farm at Sidlaghatta was referred to the Director of Agriculture for necessary action.

DEVELOPMENT OF LIVE-STOCK.

Improvement of Draught Cattle.—The Chairman invited the opinion of the members on resolutions 1, 2 and 3 of the Live-Stock Sub-Committee, read out by the Secretary.

The main points of the Sub-Committee's recommendations were: (i) the constitution of a Board to select a number of young *Amrit Mahal* bulls suited for breeding purposes and their supply to Village Panchayets and recognized cattle-breeders at fixed average prices, and (ii) free supply of bulls on certain conditions to villages which are either too poor or too backward to purchase them.

The members were in entire agreement with the main principles of the recommendations, and discussion centred round the personnel of the Selection Board, and the conditions proposed by the Sub-Committee under which free supply of bulls could be made to some of the villages.

At the instance of the Chairman, it was agreed that the Senior Veterinary Officer of the place could be put in place of the Superintendent of Civil Veterinary Department, and two non-officials could be nominated by the Deputy Commissioner instead of their being selected by the Board of Agriculture.

(*a*) "With a view to improve the Draught Cattle of the rural parts of the State, the Board recommends the adoption of the following measures :—

(i) A Board of Selection should be formed consisting of the Live-Stock Expert, the Senior Sericultural Officer of the locality, the Superintendent of the Amrit Mahal Department, and two non-officials nominated by the Deputy Commissioner of the District.

(ii) This Selection Board should, once every year, before auctioning the stock, select a number of young bulls suited for breeding purposes, and every Village Panchayet which applies for it should be permitted to purchase one from among the selected lot at a price to be fixed on the basis of the average prices realized at public auctions during the preceding five years.

(iii) The above concession should be extended to recognized cattle-breeders on the recommendation of the Director of Agriculture.

(*b*) "The Board is also of opinion that in areas where people are too poor or are not sufficiently advanced, Government bulls may, on the recommendation of the Deputy Commissioner and if bulls are available, be stationed under the following conditions :—

1. The villagers must agree to have all their scrub bulls castrated.

2. The Patel of the village must be responsible for the feeding of the bull.

3. The bull should be allowed to wander with the village Herd.

4. The bull should always remain the property of Government and will be withdrawn as soon as it becomes unserviceable, and may be replaced by a younger bull at the discretion of Government. The bull will also be withdrawn if it is being neglected and if the scrubs are not all castrated.

5. The bull should be inspected by the Veterinary Inspector at least twice a year and his condition reported on to the Superintendent, Civil Veterinary Department.

6. The Village Panchayet, or failing which, the Village Patel should submit a report in the First Week of July each year of the number of calves born during the year in a prescribed Form."

Mr. Yegnanarayana Iyer desired to know if the present scheme was in lieu of the existing practice of granting subventions up to Rs. 150 to private individuals for the maintenance of breeding bulls.

The Secretary drew the attention of the members to the opinions expressed by Dr. Coleman, Major Simpson and others about the failure of the subvention scheme.

Major Simpson observed that there were very few cases in which people took advantage of the subvention scheme and it could therefore be abrogated.

Mr. Venkoba Rao was of opinion that grants under the subvention scheme might conveniently be reduced.

Mr. Yegnanarayana Iyer was not however convinced about the desirability of abrogating the scheme. If the scheme had not been a success in the past, he observed, it was for want of adequate funds. He strongly pressed for the continuance of the scheme.

The rest of the members did not appear to be very keen about the continuance of the scheme, and the following resolution was adopted :—

"This Board is of opinion that the scheme of granting subventions for encouraging the maintenance of breeding bulls sanctioned in Government Order No. 1173-41, A. & E. 12-17-11, dated 1st June 1918, may be abrogated."

Sunflower Ensilage.—The Secretary observed that Resolution IV of the Live-Stock Sub-Committee and Resolution IV of the Rural Development Sub-Committee could be taken up together as both of them related to the growing of fodder crops and the making of ensilage. The Live-Stock Sub-Committee had given the opinion that ensilage was more suited for milch cattle than for ordinary draught cattle, and considering the difficulty which the smaller raiyats felt in preparing it, it was not prepared to recommend its wholesale adoption by ordinary raiyats. The Rural Development Sub-Committee seemed to be keen about the spreading of the knowledge of ensilage making and had recommended that District Boards should be requested to grant suitable bonuses to induce people to start ensilage-making.

The Chairman observed that this question of preservation of fodder came up prominently in connection with the last drought in the Kolar and Tumkur Districts and desired to know what were the results of the experiments conducted by the Agricultural Department with regard to this subject.

Dr. Narasimha Iyengar said that sunflower, jola and maize had all been successfully preserved in silos and that ensilage had been found to be very beneficial for milch cattle. There was however one difficulty, he added, and that was that the ensilage could not be kept in good condition for more than four to six weeks after the pits were opened.

Mr. Yegnanarayana Iyer observed that the main points in favour of this system of preserving fodder were: (i) the difficulty in transporting it from place to place which ensured its availability to the grower just when fodder is scarce, and (ii) freedom from risks on account of fire, and urged the adoption of measures calculated to spread its use wherever possible.

Mr. Hampiah said that several villages in the Kolar District had grown sunflower which did not require much rain, but cattle did not take to it very easily. A mixture of sunflower and bean stalk could be used with great advantage.

Mr. Krumbiegel remarked that ordinary raiyats were not generally in a position individually to grow enough of fodder required for preservation in silos, and even if in some cases they were able to grow the required quantity, they would not be able to utilize the whole of the preserved fodder, as it would not remain in good condition for a sufficiently long time after the pits were opened. He therefore suggested ensilage-making by villagers on a co-operative basis as is done in certain parts of the Bombay Presidency.

Mr. Narasinga Rao observed that so far as Malnad was concerned, there was no need to specially grow sunflower or any other fodder crop, as in certain seasons there was plenty of grass available, and it only needed cutting and preserving it so as to make it available later.

"It was then resolved that the question be referred back to the Live-Stock Sub-Committee for reconsideration in the light of the above discussion and the recommendations of the Rural Development Sub-Committee."

Encouragement for Horse and Pony Breeding.—After a few general observations on the part of some of the members about the unsuitability of Kunigal for horse-breeding and the doubtful advantage of the scheme from an agricultural point of view, the following resolution vetoing the recommendation of the Sub-Committee was adopted:—

"This Board is not in favour of recommending the scheme suggested by the Deputy Commissioner of Tumkur for granting small loans to intending pony-breeders and for deputing Captain Aga Mahomed Jaffer to horse-breeding centres for purchasing Brood Mares."

RURAL DEVELOPMENT.

Trench System of Latrines and Improved Manure Pits.—Regarding the suggestion of the Sub-Committee to prepare suitable pamphlets with a view to popularize the trench system of latrines and improved manure pits, Mr. Abdul Quddus proposed that the pamphlets should be published both in Kannada and Hindustani, and the suggestion was accepted by the rest of the members.

The resolution of the Sub-Committee on the subject was adopted in the following revised form:—

"This Board is in entire agreement with Mr. Zahiruddin Mecci's views about the desirability of popularizing the trench system of latrines, and pucca water-tight pits with shelter for stocking manure in villages, and with a view to bring about this, the Board recommends the adoption of the following measures:—

(i) Suitable pamphlets in Kannada and Hindustani about the two systems should be prepared by the Sanitary Commissioner in consultation with the Agricultural Department and distributed broadcast among the villagers.

(ii) Government should be requested to instruct District Boards to adopt these systems in at least one village in each taluk to serve as models and to make some provision in Village Sanitary Regulations to give power to the Village Panchayets to enforce them in areas within their jurisdiction.

Starting of Co-operative Grain Banks.—With regard to Resolution III of the Rural Development Sub-Committee about the desirability of starting Co-operative Grain Banks, the Chairman observed that it would perhaps be better to defer the consideration of the question until the next meeting when it might be discussed with the Registrar of Co-operative Societies.

The Secretary said that the Registrar was present at the meeting of the Sub-Committee, and it was as a result of a prolonged discussion with him that the Sub-Committee had accepted the resolution recommending the formation of these banks, and as the opinion of the Board on Government Order No. I. C. 3900-14 Stes. 25-24-1, dated 9th December 1924, reviewing the Export and Import Trade, wherein reviving the ancient system of storing up grain in Dharmagolas had been suggested, had long been overdue, it would probably be better to express the opinion of the Board on the resolution of the Sub-Committee.

Mr. Yegnanarayana Iyer observed that the Registrar had emphasized the need for substantial financial help for the construction of granaries to ensure the success of the scheme.

While the members were in general agreement with the first part of the Sub-Committee's resolution recommending the starting of Co-operative Grain Banks in suitable places, they were not in favour of approaching Government for any financial help for the purpose, and the following resolution was therefore unanimously adopted:—

"This Board confirms the opinion expressed by the Special Committee about the desirability of starting Co-operative Grain Banks in suitable places although it is not in favour of reviving the ancient system of storing up grain in Dharmagolas to any large extent."

Subsidiary Industries for Raiyats.—The members were in entire agreement with the opinions of the Sub-Committee about the desirability of encouraging cattle-breeding, sericulture, and horticulture, and to a limited extent, spinning and weaving, as subsidiary occupations for raiyats, and the following resolution was unanimously adopted:—

"This Board agrees with the opinions of the Special Committee about the suitability of cattle-breeding, sericulture and horticulture as subsidiary occupations for our raiyats, but differs from the view expressed in the resolution about the undesirability of encouraging spinning and weaving. The Members of the Board are of opinion that spinning and weaving are also useful to a limited extent as subsidiary occupations for our raiyats, and it is desirable to encourage these among special sections of our raiyat population (weaving among Panchamas and Kurubars, and spinning among gosha women) by the supply of suitable looms and charkas to deserving persons on suitable terms by the Department of Industries."

Bee-keeping as a Cottage Industry.—With regard to the recommendations of the Sub-Committee to approach Government for an annual grant of Rs. 3,000 for five years, for carrying on the experimental and demonstration work required to popularize bee-keeping as a cottage industry, the Chairman testified to the excellence of the honey extracted from the hives kept in the Agricultural Department, and said that it was just as good as the best Australian honey, and desired to know how the methods recommended by Dr. Kunhi Kannan differed from the ordinary methods, and if, in view of the money that could be realized by the sale of the honey, it was not possible to manage with a smaller grant.

Dr. Kunhi Kannan said that bee-keeping already existed in the State as a cottage industry in parts of the Malnad, but on account of the crude methods employed, the yield was low and the honey obtained generally contained a lot of undesirable material which reduced its food value. He explained how these defects could be removed by the introduction of improved hives and the honey extractor. He added that the possibility of extending the industry to the Maidan parts of the State, where it does not exist at present, and the introduction of better types of bees were problems of great complexity which entailed a good deal of experimental and demonstration work, and this necessarily meant some expense for the additional staff required for the work. The annual grant of Rs. 3,000 he had asked for, was really very modest and well worth spending, considering the substantial additional income which it was sure to bring to many a poor family in the State.

Mr. Hunt observed that the industry deserved to be popularized and the Sub-Committee's recommendation for an annual grant might be approved and submitted for the favourable consideration of Government.

The rest of the members were also agreeable to this, and the following resolution was adopted unanimously:—

"This Board is of opinion that attempts should be made to popularize the keeping of bees for honey as a cottage industry in such parts of the State as afforded the necessary facilities for it, and to investigate the possibilities of extending it to other parts as well, and it therefore suggests that Government should be requested to make an annual grant of Rs. 3,000 for five years to the Agricultural Department for the necessary Experimental and Demonstration work."

Improvement of Roads in Rural Areas.—Col. Crawford explained the difficulties felt in several parts of the State for want of facilities for moving agricultural produce from place to place and the importance of improving the roads in rural areas.

The Chairman observed that attending to the improvement of roads in rural areas was part of the legitimate duties of District Boards and other local bodies and that he had however no objection to invite their attention to the urgency of the problem.

"Resolved that Col. Crawford's suggestion regarding the urgency of improving roads in rural areas be recommended to the Village Panchayets and District Boards for favourable consideration."

AGRICULTURAL EDUCATION.

Rural Science Instruction in Middle School.—Referring to the recommendation of the Agricultural Education Sub-Committee to introduce the scheme of Rural Science Instruction in about a dozen Rural Middle Schools, and confining the experiment for the present to the Bangalore and Mysore Districts, Mr. T. Narasinga Rao observed that great difficulty was felt by Mysore students in getting admission to Agricultural schools and colleges outside the State, and as such extending the facilities in the State for spreading Agricultural Education was a matter of great urgency. He suggested that Horticulture and Sericulture should be included in the regular course of the Hebbal School instead of asking the passed students of the Hebbal School to undergo an additional year's course in these two subjects. He desired to know, however, why the experiment was proposed to be confined to Bangalore and Mysore Districts instead of spreading it over all the districts.

The Chairman replied that it was to facilitate efficient supervision.

"After discussion it was resolved that the Director of Agriculture be requested to prepare a set of detailed instruction sheets based on the syllabus contained in Dr. Coleman's Report on Agricultural Education including Sericulture and Horticulture as well and to place it before the next Meeting of the Board, and that in the meantime the scheme suggested by the Sub-Committee be recommended for the favourable consideration of Government."

The following are the details of the scheme as finally accepted by the Board:—

I. The Director of Agriculture should be requested to depute an officer of the Department to inspect the following and other places and submit a report as to their suitability for the starting of the scheme of Rural Science Instruction.

Anekal, Attibele, Harohalli, Kudur, Hunsanjaranahalli, Amrutur, Hongunur, Kyatasandra, Mayur, Revoor, and Kunigal or Hebbur.

II. The course should be one of three years' duration commencing with the second year class of the Middle Schools.

The Director of Agriculture should be requested to draw up for each of the three classes, a detailed syllabus based on Dr. Coleman's suggestions in his Report on Agricultural Education, and containing in addition, the elementary principles of Horticulture and Sericulture. The time available for this instruction

would, it is understood, be an hour in the morning for five days in the week for practical field work, and three periods of 45 minutes each per week for each class for demonstration and theoretical instruction.

III. The places selected for the introduction of the scheme should be such, that a great majority of pupils attending the school should be living within a radius of about one mile. The subject should be made compulsory except in cases where a pupil is living too far away or for other reasonable causes.

IV. (*a*) For the present, a dozen teachers should be selected from among the batch of men who have already received an agricultural training, and they should be made to undergo a further short course in Horticulture and Sericulture before they are posted for this work.

(*b*) To enable a steady supply of trained teachers for this work in future, arrangements should be made to offer eight scholarships of Rs. 20 each per month to young men who have taken their diploma in L.Ag., and whose general educational qualifications are not less than the S. S. L. C. and give them a course of training in Horticulture for six months in the Lal-Bagh, and Sericulture for six months at Mysore.

(*c*) These teachers should be placed on a special cadre with an initial salary of Rs. 40 per month with a grade going up to Rs. 70.

V. The supervision of this work should be entrusted to an officer of the Agricultural Department, whose services may, for the time being, be lent to the Department of Education. He will have the salary and status of an Assistant District Inspector in the grade Rs. 75-10/1-125.

Officers of the Agricultural, Horticultural and Sericultural Departments should co-operate with the Inspector-General of Education in arranging for the technical guidance of the Supervisor in his work by including these places in their tours, and inspecting the schools on the technical side, and sending their reports to the Inspector-General of Education.

VI. Provision should be made for an initial grant of Rs. 250 per school for the necessary equipment for the starting of the scheme, and there should be an annual recurring grant of Rs. 150 per school in the first few years, and attempts should be made to reduce the annual recurring expenditure to about Rs. 50.

VII. Efforts should be made to secure free of cost, the land necessary for the purpose—about half an acre of wet and one acre dry—and provision should be made for the purchase of the land or the sinking of a well in places where these cannot be had free, about Rs. 500 per school being the amount required for this.

Punjab Economic Inquiry Board.

The following is a summary of the Proceedings of a Meeting of the Board of Economic Inquiry, Punjab, Rural Section, held in the Financial Commissioner's Room, Lahore, at 11 A.M. on Tuesday, the 19th January 1926, with Mr. C. M. King, Esq., C.S.I., C.I.E., I.C.S. (*Chairman*), in the Chair.

1. The minutes of the meeting held on the 26th November 1925 were taken as read and confirmed.

2. *Agricultural Indebtedness Inquiry.*—A discussion took place on this Report, copies of which had been circulated to members. There was some slight difference of opinion as to its disposal, but after reference to Mr. Strickland it was decided that the Report should not be published.

3. *General Economic Inquiries.*—

A.—Begun in January, 1925.

(*a*) *Amritsar Inquiry.*—Mr. King reported that he had visited the village of *Ghuggarbhana*, and considered that the investigator had made good progress with his work. In some respects he had not been sufficiently systematic, and the Report as written would need considerable revision. At the same time it was promising.

(*b*) *Multan Inquiry.*—Mr. Emerson reported that the investigator was now engaged in writing up his Report. He (Mr. Emerson) had only seen a limited portion of what had been done. There was a tendency not to put down enough in the way of facts, but rather to write an essay on the heading of each Chapter. The investigator was not progressing as quickly as he ought to do.

NOTE.—In the case of the above two investigators, an extension was granted to the end of April 1926.

(*c*) *Rohtak Inquiry.*—Professor Brij Narain's letter on the progress of this inquiry, in which it was noted that the Report was nearing completion, was read. The second part of the letter suggesting another inquiry by the same investigator in the Gurgaon District was withdrawn.

(*d*) *Rawalpindi Inquiry.*—Mr. Stow's letter was read, and the Board noted with satisfaction that the Report was practically finished.

NOTE.—An extension of service was granted to the investigators in (*c*) and (*d*) above up to the end of January 1926, and the Chairman was authorized to extend this, if necessary.

B.—Begun in March-April, 1925.

(*a*) *Jullundur Inquiry.*—No report had been received from Mr. Calvert, but the Honorary Secretary intimated that he understood that after a visit to the investigator in the village, Mr. Calvert had decided that the investigator, though not particularly satisfactory, should be retained.

(*b*) *Lyallpur Inquiry.* Mr. Milne reported that Mr. Roberts, the Member-in-Charge of this inquiry, had been in communication with the Lyallpur Agricultural College, and with him as Director of Agriculture, in the hope of securing the services of S. Randhir Singh to complete the work of S. Jannal Singh, deceased. Mr. Milne intimated that there were difficulties in the way, but he hoped that the services of S. Randhir Singh would be put at the disposal of the Board. Failing that, Mr. Roberts was authorized to select another man.

C.—Begun on 15th June, 1925.

(*a*) *Hissar Inquiry.*—Mr. Trevaskis intimated that the investigator had completed the first three chapters of the questionnaire. It was noted for the first time that the investigator was a non-cultivating landowner in the village, and as a result the Board recognized that it will be necessary to scrutinize his work with the greatest care to see that the natural tendency to distortion is overcome.

(*b*) *Dera Ghazi Khan Inquiry.*—Mr. Wilson, who has taken over charge of this inquiry, stated that the

village selected was not typical of the Dera Ghazi Khan District. After some discussion it was decided that as a beginning had been made, the inquiry should be completed.

A suggestion was made for an inquiry in the Muzaffargarh District, but it was felt that this had better be postponed till Mr. Anderson returns from leave.

(c) *Sialkot Inquiry.*—No report had been received from Mr. Coatman.

4. *Publications.*—

(a) A discussion took place on the policy which should be pursued by the Board in respect to publications. It was decided—

(i) that the Board should not confine itself to the publication of reports prepared directly under its auspices, but would welcome the submission of articles and reports of a suitable nature from members and others:

(ii) that publication should not be decided upon until members had had a full opportunity for discussion;

(iii) that normally the discussions of the Board could not suitably be included in publications.

(b) The President read a letter he had received from Professor Brij Narain dealing with Professor Myles' article on "*Sixty Years of Punjab Food Prices, 1861-1920)*". It was suggested that Professor Brij Narain should write the matter up for the *Indian Journal of Economics*, and 2,000 reprints could be had for the Board. To this course, Professor Brij Narain agreed.

5. *Travelling Allowance for Investigators.*—The Honorary Secretary raised the question of Halting Allowance in the case of investigators. The Board decided that when an investigator halted away from his village with the written consent of his Member-in-Charge, he should draw Halting Allowance according to the "Fundamental Rules".

6. *Decay of the Iron Industry in the Punjab.*—L. Mulk Raj's letter suggesting an inquiry into the above subject was read. Mr. Emerson suggested that one of the reasons that had led to the decline of smelting was the scarcity of timber for the purpose. L. Mulk Raj undertook to make inquiries on the matter, and put up a note for discussion.

7. *Catalogue of Economic Literature.* The Honorary Secretary reported that the clerk of the Board had been engaged in cataloguing the economic literature in the Lahore Libraries in addition to his other duties. With the volume of office work he now had progress was very slow. It was agreed that an additional clerk on Rs. 60 to Rs. 70 should be taken on for two months to allow the clerk of the Board to complete this catalogue.

American Trade with India.

The following statistical matter is based on cable received from the Department of Commerce, Washington, D. C.:—

Exports and Imports.

Total imports into the United States, January, 1926	$416,766,000
Total exports from the United States, January, 1926	$397,096,000
Excess of imports over exports ..	$ 19,670,000

Trade with India.

Imports from India to the United States, January 1926	$ 17,795,000
Exports to India from the United States, January 1926	$ 3,715,000
Excess of imports over exports ..	$ 14,080,000

Some of the more important items *exported* from the United States to India during January were as follows:—

Canned fruit	151,000 lbs.
Dye stuffs	109,000 lbs.
Kerosene	10,785,000 gallons.
Lubricating oil	1,144,000 gallons.
Machinery, all kinds ..	$ 500,000
Tinned plate	9,036,000 lbs.
Tinned sheets	2,082,000 lbs.
Tubes, pipes and fittings ..	1,417,000 lbs.
Bolts and nuts	48,000 lbs.
Automobiles	135
Automobiles (Canadian manufacture)*	980
Trucks	153
Trucks (Canadian manufacture)	316

Note.—Total exports of automobiles and trucks from the United States to all countries in January were 71,312 valued at $ 17,886,000. Canada exported 1,399 trucks and 3,760 automobiles in January.

Some of the more important items *imported* from India to the United States during January were as follows:—

Burlap	57,327,000 lbs.
Jute	12,000 tons.
Raw Cotton	384,000 lbs.
Goat skins	2,260,000 lbs.
Shellac	2,287,000 lbs.
Tea	820,000 lbs.
Mica	26,000 lbs.
Castor seed	7,783,000 lbs.
Manganese ore	3,000 tons.
Myrabolams	1,000 tons.
Wool	838,000 lbs.

Trade with Ceylon.

Imports to the United States from Ceylon, January 1926	$7,577,000
Exports to Ceylon from the United States, February 1926	$ 172,000
Excess of imports over exports ..	$7,405,000

Some of the more important items *exported* from the United States to Ceylon during January were:—

Automobiles	76
Trucks	17
Lubricating oil ..	22,000 gallons.
Kerosene	10,000 gallons.

Important exports from Ceylon to the United States during January included 70,858 lbs. rubber and 11,704 lbs. tea.

Books in Brief.

Short Reviews of Recent Books.

The Evolution of Provincial Finance in British India.

By B. R. Ambedkar, D.Sc. (Econ). Messrs. P. S. King & Son, Ltd., Orchard House, Westminster, London. 15 *sh.* net.

This is a timely monograph on a subject of current semi-political interest in this country. A problem of the Post-Reform period has been the financial relation of the Central and Provincial Governments in India. Mr. Ambedkar has provided for us in this volume an exposition of what that relation is which is both admirable and suggestive. In view of the fact that the subject is now under the active consideration of both peoples and Governments in this country, we would invite wide publicity to this brilliantly written book. Prof Seligman of the Columbia University, New York, writes with appreciation of its contents and we fully endorse his opinion of its worth and value The author is, in our view, unnecessarily apologetic in not dealing with the subject of Local Finance We would rather commend his reservation of this topic to a separate publication. Particular attention should be drawn, at the present moment, to Part IV of the work where the author considers the position of Provincial Finance under the Reforms Act and furnishes us with a critique of the changes introduced by it. Altogether a commendable work of great merit and scholarship, well written and well presented.

Borderlands of Economics.

By Radhakamal Mukerjee, M.A., Ph.D., Professor of Economics and Sociology, Lucknow University. Messrs. George Allen & Unwin, Ltd., Ruskin House, 40, Museum Street, London W.C. 1. 12 *sh* 6*d*. net

This is a great work which strikes, if not new ground, at least ground largely yet uncovered Dr. Mukerjee's greatest qualification for a work of this kind is his splendid synthetic skill in exhibiting complicated issues in a few, simple and direct words. This rare virtue is seen to considerable advantage in the present work. Though, in utter humility, he calls it "frankly prefatory" in scope and treatment, it lays down a mode of approach to Economic Science generally that is apt to be too largely forgotten. Man is a Man for a' that seems to be the basic idea. We would not go into details of the work or its contents here, for it is one that ought to appeal individually to each Economic student. It is attractively written, especially when we consider the nature of the ground covered by it and ought to enhance the already high reputation that its author has won for himself.

Occident and the Orient.

By Valentine Chirol, sometime Director of the Foreign Department of the *Times*. The University of Chicago Press, Illinois, U.S.A.

We owe an apology to the Publishers of this work for the delay that has occurred in noticing it. The delay, though unavoidable, has enabled us to read it through and through. Sir Valentine deserves to be congratulated on the highly readable set of Lectures he delivered on the Harris Foundation in 1924. The Harris Foundation Lectures at the University of Chicago, made possible by the heirs of Mr. & Mrs. Harris, were instituted in 1923 for promoting World-Knowledge among Americans. It is a good sign of the times that America feels that there is need for the promotion of a better understanding on the part of its citizens of the other peoples of the world. Such an understanding would doubtless lead to improved international relations and to a more enlightened world-order. Sir Valentine as the first Lecturer on the Foundation, has accordingly chosen a subject of supreme interest—the relations of the Occident with the Orient—and has applied his fertile imagination to it in his usual masterly manner. But unfortunately for the reader in the Orient, it has not been in the sympathetic manner he has a right to expect from so great a writer. A sympathetic presentation of the Orient is what is required, we do not say that truth should be maimed or despoiled but there is all the difference between a treatment that is destructively critical and one that is positively helpful while not hurting truth. It is the mental attitude that matters in a case of this sort and it is the one thing that is lacking in Sir Valentine's delineation of the Orient. In the very first Lecture this is more than visible. Turkey, in its latest phase, is not quite pleasing to Sir Valentine. We would rather see that he gives credit to her. Her position with Britain to-day—we are writing immediately after the signing of the Anglo-Turkish Treaty at Angora - belies his prognostications to a great extent. Western people should approach their Eastern brethren with a greater dash of the *human* feeling that seems unfortunately to evaporate when they talk of Eastern peoples or problems. Human equality should be a fundamental article of faith with the West if it desires to understand the East. The West should eliminate its feeling for and prejudice against *Race* and *Colour*, and if it did, it would soon reach a position more satisfactory to itself. One sentence ought to do to indicate Sir Valentine's bias. Turkey, he says, has already begun to scrap her old financial obligations. Has she? He himself says she has "not formally repudiated" them. If so, where is the necessity for this imperfect generalization of uncertain validity? As it is we must state that his otherwise fine Lecture II (The Passing of the Ottoman Empire) ends tamely and even unsuggestively. It is characteristic of Sir Valentine that the separation of Religion from State in Turkey does not win his approbation. He is a *politician* and no more! What of the European scramble in Turkey and the economic pressure which, he says, the Turk does not understand. If the Turk closed the trade route to the Orient and opened the way for the discovery of America, what has the western European done in Turkey itself? The impartial critic will answer that the record is not by any means a justifiable one. In Lecture III (The Peculiar Case of Egypt) we have the same attitude exhibited in stronger form. "For the Egyptian," says Sir Valentine, "has not yet put off the old Adam." Then again we have the following—They (the Egyptians) "may find the task of governing themselves more difficult than they imagine", though he is free to admit, that "they base their claim to make the attempt on a principle which the Occident cannot deny, namely, that it is through freedom and the exercise of

independent responsibility that nations can in the long run alone learn to govern themselves." Lecture IV is devoted to "The Great British Experiment in India". Mahatma Gandhi comes in for considerable attention. He is rather inaccurately described as "a Hindu but of the somewhat lowly caste of Bunnias, or traders". A Bunnia is, we believe, a Vaisya and so a twice-born. How is he "lowly" born as Sir Valentine terms it? "Lowly" is, we rather think, an altogether objectionable, if not needlessly offensive, term to use in this connection. Such a characterization cannot add to the strength of Sir Valentine's argument against him or his political creed. Dyer's action at Amritsar is termed "ruthless". He thinks that the new assemblies in India have "on the whole" shown a great deal of capacity and discretion". Sir Valentine is too shrewd not to use the argument "of the duty towards the scores of millions of inarticulate Indians" etc., etc. This speaks for the diplomat in him and not the statesman. The retort is easy on the basis of the familiar *argumentum ad hominem*. Naturally for Sir Valentine "the critical period of transition in India" may "prove longer and more difficult than was anticipated when India received five years ago her great constitutional charter." That "charter" is the great experiment and she owes it, we are told, "not only to herself but to the Indians, and even those who now revile her, to go through with it." There is a great deal of rhetoric in this and the other chapters we have reviewed but it is indicative of popular prejudices current in the West and not—we regret to have to record—sympathetic policies which is what the Harris Foundation aims at. We have written enough to make our criticism of Sir Valentine's lines of thought clear and so shall rest content by inviting the reader to the Lectures which should be read and pondered more by peoples in the Orient than in the Occident.

English Constitutional History.

By D. J. Medley, M.A., Professor of History in the University of Glasgow. Sixth Edition. Basil Blackwell, Broad Street, Oxford. Oxford University Press, Bombay and Madras.

Though this is a volume intended primarily for students, we would warmly commend it for use by publicists in India. It is compendious and up-to-date to a degree. To pass through six editions, a book of this nature should possess real merit. And this book does possess that merit. It is well conceived and well written. It is both descriptive and critical. In India no subject is at present better or more discussed than the "Liberty of the Subject" and the best and most informing treatment of it that we have recently seen is to be found in this book. Then again, "Revenue and Taxation" is another topic of the hour and Mr. Medley's account of it in the constitutional history of England is redolent with suggestion. The Appendix is devoted to important cases in constitutional law, a by no means unimportant feature of the work. If a closer knowledge of India is a desideratum among Englishmen generally, a clearer knowledge of the constitutional history of England is more than so among Indians of to-day. A book like this will pave the way for that much desired better knowledge.

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Detailed Contents.

	PAGE
BHADRA ANICUT AND CHANNEL WORKS— *Speech by H. H. The Maharaja*	237
AGRICULTURE IN BIHAR AND ORISSA, 1924-25— *By "Viator"*	238
STATISTICAL INFORMATION IN CANADA— *By The Editor*	240
THE DAILY BREAD PROBLEM— *By Jamshed N. R. Mehta, President, Karachi Municipality*	241
THE DAILY NEWSPAPER— *By Paul Hutchin*	244
EDUCATION IN MYSORE— *By D. Venkataramaiya, B.A., L.T., Circle Inspector of Education (Rtd.)*	247
INTERNATIONAL ECONOMIC CONFERENCE	251
ECONOMICS IN THE WEST	254
CANADIAN TRADE AND FINANCE	258
SESQUI-CENTENNIAL INTERNATIONAL EXPOSITION	261
INDIAN ECONOMIC NOTES	264
TOPICS IN THE JOURNALS	268
BOARD OF ECONOMIC INQUIRY, PUNJAB	274
MYSORE ECONOMIC CONFERENCE	276
BOOKS IN BRIEF—	
A Sketch of the History of India	278
Raja Ram Mohun Roy	280
Indian After-Dinner Stories	280
Oleaginous Products and Vegetable Oils	280
SUPPLEMENT—ADDRESS BY THE DEWAN TO THE MYSORE REPRESENTATIVE ASSEMBLY	1—8
ADVERTISEMENTS—	

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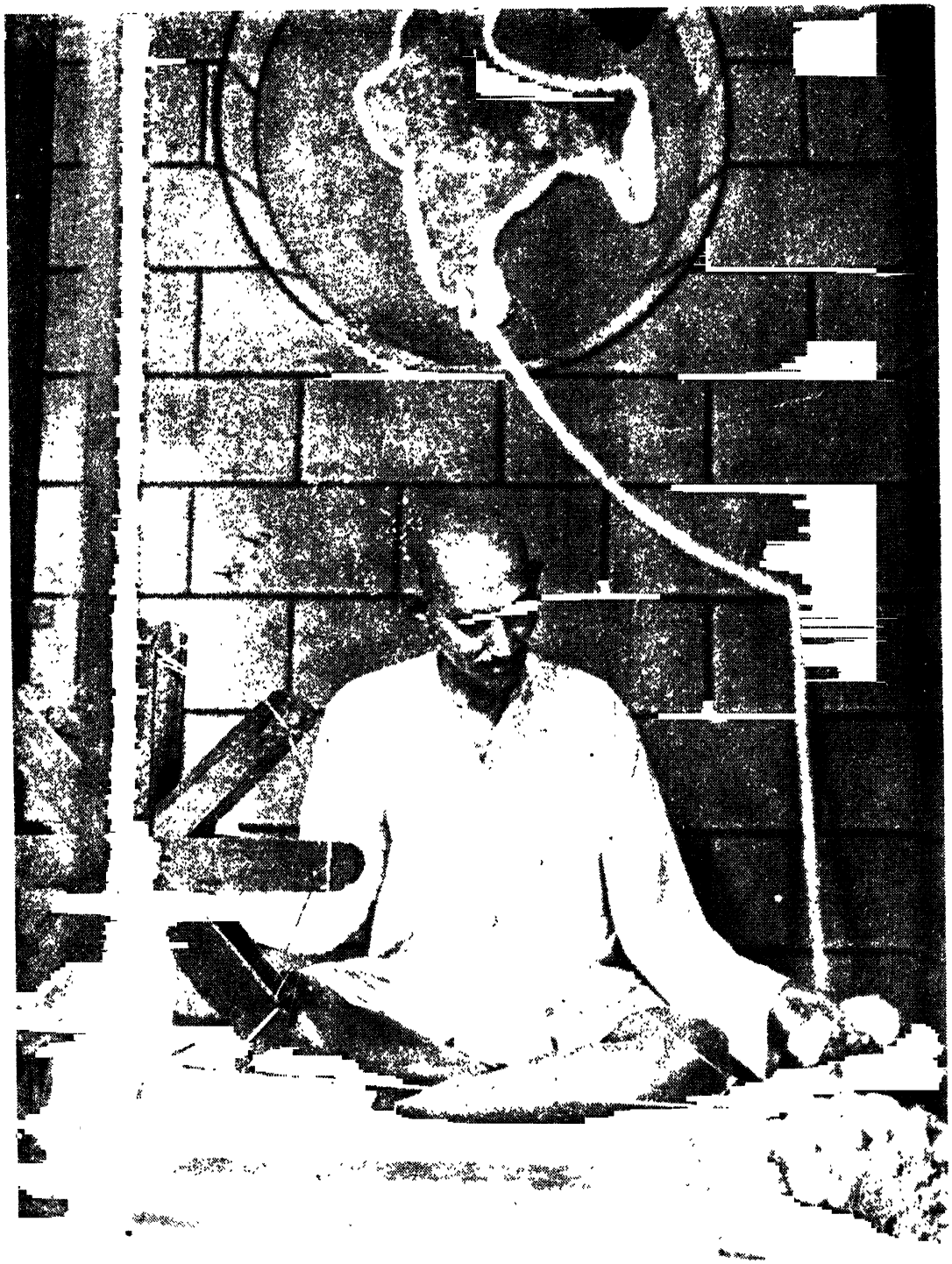
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Bhadra Anicut and Channel Works.

Speech by H. H. The Maharaja.

[*In declaring open the Bhadra Anicut and Channel Works on 12th June 1926, H. H. The Maharaja made a short speech breathing the utmost friendliness to the people of the Malnad country. The text of the speech is given below. Ed., M.E.J.*]

I have come here to perform the Opening Ceremony of the Bhadra Anicut and Channel Works to mark my appreciation of this new departure in the development of the Malnad. It is an added pleasure to me that I am able to meet the representatives of the Malnad Districts of Kadur and Shimoga in their own beautiful forest country.

There have hitherto been no irrigation works of any magnitude constructed either in the Tunga or the Bhadra valley though these two rivers between them drain as much as 2,500 square miles of country. The present anicut represents the first attempt to utilize the waters of the Tungabhadra valley within our State.



H. H. The Maharaja of Mysore.

The Bhadra Anicut and Channel Works were first projected so far back as 1897 to provide a protective irrigation work for this tract. For one reason or another, the construction of the anicut was deferred till the year 1917 when after further investigation my Government revived the scheme and in April 1918 authorized its construction. The full scheme which is estimated to cost nearly Rs. 16 lakhs will provide irrigation facilities for about 116 villages and the scheme when completed is expected to give a fair high return to justify its being classed as a productive undertaking.

The Malnad country being proverbial for its heavy rainfall, it was for a long time thought that irrigation works were superfluous in this region. The soil being rocky or gravelly and the slopes of the country steep, the rain water speedily escapes leaving little or no moisture in the sub-soil. In places it is hard to obtain even drinking water for men and cattle in the dry season. In spite of the heavy rain, there is less water here for fair weather irrigation than in the Maidan. Tanks and channels seem, therefore, necessary in this region to provide water for high class cultivation and, in places, for domestic supply.

Then again the Malnad has the reputation of being unhealthy. This defect can be remedied only by extending education and teaching the people to use the food and clothing demanded by the climate; in other words, by improving their standard of living. This is an economic problem. Its solution in the first instance centres on improved cultivation and getting more produce out of the soil. If the people adopt scientific methods of farming and learn to grow valuable commercial crops like sugarcane, which they can do with good water

facilities, the region will be able to maintain, in health and comfort, a much larger population than it does at the present time.

Let me take this opportunity of assuring the people of these districts that measures for their economic and social betterment are nearest to my heart and will continue to engage the earnest attention of my Government. The irrigation facilities provided by the Bhadra project will appreciably increase production in this tract. If people co-operate and make this work a success, a reservoir on this river will come sooner or later to aid both irrigation and power supply. The question of the construction of a reservoir across the Kumudvati near Anjanapur in the Shikarpur Taluk is under active consideration and we are hoping to obtain better results from Sulekere tank by improving its working.

We have started the Bhadravati Iron Works in this neighbourhood as a measure of industrial development for the State. Some 56 miles of tramway are already in operation for the service of these works. We are about to resume railway construction in the Shimoga District. Steps have been taken for improving the sanitation in rural areas, a small establishment has been sanctioned to promote the extension of village communications, and quite recently, schemes were sanctioned to provide piped water supply to the towns of Koppa, Mudigere, Kalasa and Kadur. A special grant has been allotted for the extension of the water supply of Shimoga. Measures for giving medical assistance are being extended. We are anxious to further extend education and to place at the disposal of the landholder, the tenant, the artisan, and the trader every facility within the resources of Government for improving his individual income and technical skill. It is my earnest wish that no avenues should be left unexplored to revive the prosperity of the Malnad and that the leading men of these parts should co-operate enthusiastically with Government in giving effect to the various practical measures contemplated.

Let us hope that the construction of this work may prove the precursor of a series of irrigation schemes to be constructed in future in the Tungabhadra valley and in Malnad parts generally.

With these remarks, I have great pleasure in declaring the Bhadra Anicut and Channel Works open.

Agriculture in Bihar and Orissa—1924-25.

By "Viator".

There is no province in India, the history of the Agricultural Department in which will repay careful study by the Royal Commission on Agriculture than it will in Bihar and Orissa. For the Royal Commission will realize there to a greater extent than anywhere else the difficulties against which the Department has to contend and the prejudices it still has to surmount. Mr. Dobbs, the Director of Agriculture, in his last annual report has, perhaps as a forlorn hope, abandoned the usual form in which such reports are cast. He has left the reader to gather almost all the facts and figures bearing on the progress of the Department from the reports of the Deputy Director and scientific officers which are attached to his own report and has devoted the latter almost entirely to an explanation of the objects at which he and his staff are aiming. It is a sad commentary on the intelligence of the educated classes in Bihar that such an explanation should be necessary and it is much to be desired that his justification for the existence of an Agricultural Department should be read, marked, learned and inwardly digested by the legislators who have, time and again, not only declined to sanction any increase in expenditure on the Department but have actually cut down its superior staff just when it most needed increasing. The Royal Commission might well make an endeavour to ascertain how far the Legislative Council truly represents the agricultural population in this matter.

Here in the more fortunate south of India where both in Mysore and in the neighbouring province of Madras the cry is for an expansion instead of a curtailment of the activities of the Agricultural Department, the soundness of the propositions set forth by Mr. Dobbs needs no demonstration. The first of these is the necessity for local experiment in order to obtain the exact knowledge which is necessary before any change in local practice can be recommended by the Department. The second is the necessity that local experiment should be carried out by the right men, that is, by men who have received a training in scientific methods which enables them properly to evaluate the results of

experiment. The young man fresh from a British, American or Indian Agricultural College cannot in the nature of things know as much about agriculture as the ryot who has been engaged in it all his life. What he does know far better than the ryot is his own limitations and how much he has still to learn from practical experience. The training in scientific method he has received enables him to put that practical experience to the best possible use, to get more benefit from it in two or three years than the ryot would in a lifetime and to pass on that benefit.

Mr. Dobbs candidly admits that the Agricultural Department in Bihar and Orissa, as elsewhere, tried to run before it could walk in other words that it started on propaganda before it had anything to propagate. It was not until 1914 that an attempt was made in real earnest to rectify the mistake. Unluckily by the time that the Department had as the result of concentrating on local experiments, definite improvements which it could recommend with confidence and had elaborated a scheme for dividing the province up into clearly defined agricultural tracts, each with a Deputy and Assistant Director in charge of a farm which was intended to be the focus of activity for the tract, the Legislative Council, tired perhaps of waiting for results which have seemed never to be coming, refused to heed and ruthlessly mutilated the proposals. The loss to the Province has been incalculable Take Dahia paddy alone, the variety which the Department has evolved for poor lands which are liable to drought. The estimated outturn of this variety in the South Bihar Range in 1924-25 was half a lakh of maunds more than would have been that of the best local variety grown on the same land. This meant an additional two lakhs of rupees in the cultivators' pockets, and in the right pockets too, for the poor lands which suffer from drought are usually precisely those which are cultivated by the poor man who can least afford to lose his crop. Dahia paddy is the outstanding achievement of the Agricultural Department in Bihar but there is every reason to believe that if the Department had not been starved of staff and funds alike it would have done for other crops what it has done for paddy and would by this time have found other varieties of paddy suited as is Dahia to special conditions. As it is, but little has been accomplished. As the Report of the Indian Sugar Committee showed, Bihar is a province which offers exceptional scope for the cultivation of improved varieties of cane. C. 213, one of the Combatore seedlings, is being grown on an increasing though still a very small scale in Orissa but the bulk of the work on cane in that part of the Province which needs it most—the districts north of the Ganges—has been done not under the auspices of the local Agricultural Department but under those of the Pusa Research Institute. The situation in Bihar is given in a nutshell in a remark of Mr. Sherrard, the Deputy Director in charge of the South Bihar Range, who points out that though groundnut gives a return of Rs. 100 an acre from land on which the usual crop is horsegram, the return from which is only Rs. 16, there are only 442 acres under it in his range and the difficulty and suspicion which have to be overcome before the crop can be demonstrated and introduced are surprising. The truth is that enlightened landlords mean enlightened tenantry. Where the educated classes as in Bihar view the Agricultural Department with such ill-concealed dislike, it is only natural that the tenantry should pay so little heed to its counsel. Sooner or later, there will be a change and the people of Bihar will follow the example of almost every other part of India and awake to the value of scientific agriculture. Possibly the Royal Commission may be able to do something to arouse it from its slumbers. In the meantime, the Department can only go on as it is going, pushing as rapidly as it can with its limited staff and funds the improved varieties of crops it has evolved and the improvements in agricultural practice and the fertilizers it has discovered to be best suited to local conditions, in short, as Mr. Dobbs puts it, training the staff and amassing the knowledge and materials necessary for future advance. But it is up-hill work and Mr. Dobbs and his staff would have every excuse for feeling downhearted at times. It will be interesting to watch the fate at the hands of the Legislative Council of the scheme for the expansion of the work of the Agricultural Engineering branch and also for the establishment of a farm with a view to building up a herd of dual purpose animals, that is, of draught cattle with a good milking capacity. If these fail to get through, we shall despair of the Province.

The training given by the Boy Scouts and Mr. Cecil Sharp's dancing on the æsthetic side, I consider to be the two greatest educational movements of the age.—*Dr. W. H. D. Rouse.*

Statistical Information in Canada.

By The Editor.

In the March issue of *Industrial Canada*, attention was directed to a movement in the United States having for its object the attainment of greater economies in distribution and the elimination of periods of business depression. This had its expression in two national distribution conferences, which were held at Washington, and at which many trade bodies were represented. A number of committees were appointed, which have been working on various phases of the distribution problem, and among them was one which took up the question of the collection of business figures as a means towards accomplishing economies in distribution. The conclusions of this committee on statistics were given in the March issue, these indicating the desirability of extending and improving the various sources of statistical information in the United States. From the April issue, we note that in Canada steady progress is being made in the direction furnishing the business community with statistical information along many lines of activity. In the Dominion Bureau of Statistics there exists a good deal of the organization, as least of a preliminary kind, that was recommended for the United States. In the Statistics Act of 1918, which established the Bureau, there is contained the basic legislation that is required. In the years since 1918 there has been built up an organization which, with two or three exceptions, now controls practically the whole of the official statistics of Canada.

The work that has been organized to date under the Bureau of Statistics covers:-

(1) Demography, including (*a*) The Census, (*b*) Vital Statistics, and (*c*) Statistics of Migration; (2) Social Statistics, *e.g.*, criminology, education; (3) Production Statistics, including (*a*) agriculture, (*b*) fisheries, (*c*) forestry, (*d*) mining and metallurgy, (*e*) water powers and central electric stations, (*f*) general manufactures and (*g*) construction; (4) External Trade—imports and exports; (5) Internal Trade—marketing of grain, live-stock, animal products, etc.,—cold storage—prices, wholesale and retail; (6) Transportation and Communications—railways, tramways, express companies, shipping, telegraphs, telephones; (7) Finance—dominion, provincial and municipal—currency, banking, interest, exchange, security prices, etc.: (8) General—The Year Book of Canada, Barometrics.

Considerable progress has been made in Canada in the centralization of statistical organization and the Dominion Bureau of Statistics is working in close co-operation not only with the departments at Ottawa, but with the various provincial departments and with other organizations which are in a position to collect information. In January the Bureau inaugurated the publication of a "Monthly Review of Canadian Business Statistics," which will be found exceedingly useful by those business men who wish to keep posted on the latest trends in industry and commerce. This *Monthly Review* brings together all the statistical information which is now available, bearing in any way on the business situation. It reviews these statistics and co-relates them in such a way that the reader is able to size up fairly well the situation in the Dominion. This review corresponds, as far as the limited means at the disposal of the Bureau will permit, to the monthly survey of current business in the United States.

"The final concept in the organization of the Bureau is that of a national laboratory for social and economic research," writes R. H. Coats, Dominion Statistician, in one of his reports to the Government. "Statistics are not merely a record of what has been, but are for use in planning what shall be; it is the duty of a statistical bureau to assist directly in the day-to-day problems of administration, as well as to provide their theoretic background. The action of several large universities in establishing research departments and the endowment of the National Bureau of Economic Research in the United States are suggestive here. One of the most significant of recent developments in administration is the extent to which statistical organization has been increased as a guide to policy. The United States has recently made statistical organization the subject of a special report to Congress by the official Bureau of Efficiency (a report, it may be pointed out, that confirms in its recommendations the line of action taken in Canada). In Germany the Central Statistical Department has been for many years one of the most powerful engines of government, its organization permeating the country, embracing several subsidiary state bureaus and some forty municipal offices. Italy reorganized statistics as a war measure; Spain has done the same during the present year; most European countries have centralized statistics. The progress already made in Canada has attracted favourable comment both inside and outside the country. Though the usefulness of the Bureau has only begun, in the past three years the applications to it for data by the public have been more than trebled. From an organization standpoint the Bureau may be said already to have laid the foundations for a service which under constructive development will permit it to rank with that of any other country of similar institutions and conditions."

The Daily Bread Problem.

By Jamshed N. R. Mehta,

President, Karachi Municipality

If any of you have come this evening, here, with a hope that I have ready cut out schemes, by which everyone will be able to earn by to-morrow morning, it will be a great disappointment. My idea is just to have a series of talks on the subject if one can find some way out of this problem which is getting very acute all throughout the world. The other day the American lecturer in Karachi told us that in China, at present, hardly 10% were able to get employment or earn their bread. It is so in all countries.

How it Developed?

It is necessary to trace for a few minutes how it grew stage by stage, in order to understand certain principles which are the roots of this decaying tree. In ancient times, people lived mostly in villages. Each one was a worker. He or she made something. If A made shoes, and B made clothes, A would make an extra pair of shoes and B would make an extra dozen of clothes and exchange articles with each other. People purchased all necessaries of life then by exchanges. Some who developed higher arts made beautiful articles and took to the cities and towns. Here again they exchanged their goods. The merchants went out in sailing ships to Foreign countries and also sold and bought there by exchange system. They brought again articles made in Foreign countries to their native lands. Men were content to work hard, make enough extra articles to be able to live happily.

Origin of Money.

Some ingenious brains then found a common medium, as the trade increased for buying and selling. Some used kawris, iron or brass square pressed tablets or silver pieces. As silver and gold were found in smaller quantities, and were valuable, these attracted mankind and became medium of transactions. And a hunger for collecting these silver and gold coins, as many as one could, grew considerably. With the establishments of Government Treasury, promissory notes were introduced: but even up to last few years, in our country, only silver or gold was accepted. I used to notice firms like Messrs. Ralli Brothers and others used to send lakhs of rupees in cash to Punjab to pay for grain, seeds, etc. The progress increased the hunger for collection of gold and silver. Later on the increased and expanded Banking system came in and as branches were established in all small or large towns, people now desire to see the credit side of their banking account as large as possible. All these stages continually led to increased discontent.

Rush to the Cities.

Side by side arose the industrial growth and where an article was made one by one, manufacturing processes brought out thousands. The result was that in every country, people began to rush out from villages and were hired by industries which were mostly centred in the cities. Large capitals were sunk in machinery, buildings, stocks, land, and in building residences, houses, palaces, etc. The growth was carried out at a pace when we soon found our over-production everywhere in most of the articles. The result was either to face unemployment by stopping of manufacturing or sending out articles for export, thus we entered into a competition with other countries and other nations which ultimately resulted in a physical war and the commercial war is still raging on and every day is becoming furious. To-day we find thus our economic life stranded. Hunger for making money, discontent, and thus economic stranding have brought about in all countries acute unemployment.

Additional Mistakes: Education Folly.

In our country we have to suffer for a grave folly. We adopted a system of education which ruined us. I do not wish to throw any responsibility as it was done unconsciously but it must now open our eyes. Every child in India was formerly trained to follow the footsteps of his father. He or she was taught to use hands, eyes, and feet to work hard and produce, and was given general knowledge of life. But the system of education made our children to completely give up using of hands and legs, they were kept on books only. Instead of selecting a few of them for higher education, everyone rushed to colleges and learned professions. Thus our mentality changed in the wrong direction, our hands became too soft to work and we began to look upon hand-work and labour as lower and we lost the dignity of labour. This tragedy occurred in almost every house.

The Unemployment.

What is the result? Every learned profession is full with starving men and women without work. It is a shocking sight. This year the Karachi Engineering College will give us 25 B.E.'s; Poona College will give us 40 B.E.'s. What will these 65 Civil Engineers in Bombay Presidency do? Similarly we will have about 200 lawyers and 100 doctors this year and year by year they increase. They are mostly persons with ordinary intellect and can do no other work but the one in which they are trained. Every year after the Matriculation examination, students rush to our city from Cutch, Kathiawar, Sind and Punjab. Is there any job, Sir? This is a question asked by hundreds and thousands, and the sight of a Matriculation class makes me sad each time I am in a school. Our changed mentality to look at labour as something low, owing to our faulty education has brought upon us untold misery. We forgot our hand-crafts, gave up agriculture which is our main industry, we ran after wealth and were allured in discontent and are facing acute commercial stagnation. And what are we to do now?

Is "Swaraj" a Ready Remedy?

I have been thinking of it considerably. I have often heard that unless we get Self-Government, we cannot do anything. Many of our leaders continually tell us that exchange problems, tariff duties, loot by Foreign Government are the main causes. I do not want to discuss these problems here; I am for Self-Government because I am an Indian and every son of his native land would like Self-Government and so do I want it. But let us take it for granted that we become a self-governing nation to-morrow, how are we going to solve these exchange, tariff and foreign loot problems? Let me give you one instance. The other day we invited the Consul-General of Germany who was on a visit to our city to meet at our Buyers and Shippers' Chamber. We asked him what was the aim of Germany in India. His reply was very frank. He said: "Sir, we want all your raw materials—that is all we care for."

Changed Outlook Essential.

We told him, that years ago India sent a considerable quantity of cocoanut oil and jute bags to Germany. They have now put a stop to these exports from our country by levying 50% duty or more on cocoanut oil and jute bags, and at the same time allowing both raw materials free of duty in their country. And again we were given a very frank reply that in the interest of their labour it was absolutely necessary. Now supposing we had Swaraj, either we must levy counter-duties, thus entering into a commercial war, declare a physical war or enter into international treaties. This we will have to do with each country and nation. These are problems which we cannot decide in a day or a year. It takes generations sometimes to settle these international problems and many years to settle problems of exchange, tariff duties, etc. I feel real remedies of unemployment and bread problem for our country are three:

(1) Agriculture.

(2) Change our mentality for labour.

(3) Change our educational policy immediately to serve the present generation.

It is vitally necessary that we change our attitude of mind towards manual labour. We gave up our hand-crafts and other works because we considered labour as a lower type of work. Our hands have now become soft, our legs have hardened, our vision is not acute and we have made ourselves useless for hard work. We gave up our fathers' industries and small hand-crafts. In all ages, somehow and rightly it had been believed that a son was hereditarily inclined towards his father's profession and he could do it well. Where sons were bright students, they were allowed to take up other lines. It is necessary even at this stage to learn to do something to work with our own hands. We must put off that false ideal of shame. I have seen many young men refusing to do work which they consider lowering to their dignity. In my own office, I have found my staff making such comparisons. But in all ages, Prophets, Philosophers, Poets and men of genius have considered labour as noble. Even Prophets themselves have been actual labourers.

The Dignity of Manual Labour.

Labour has been praise in all scriptures. Blessings are being invoked on labour from all churches and temples. In those countries, and in those times, where a high premium of equality is put on labour and due respect is given to it, we find prosperity and happiness.

Physically, we are meant for labour and hard work. I see no other way, no choice for the present generation but either to labour and work hard or to perish as individuals and even as a nation.

There are many useful forms of labour and agricultural industry which we must take up at any stage of life, whether old or middle age or youth. Mr. Henry Ford has made a scheme for one of his extensive departments that all men should work 4 hours in the field and 4

hours in the factory. An educated man with his intellect can develop his hand-craft profession to more and more perfection. I would suggest our clerical union to make arrangement by which we can learn making tools, furniture shoes and such articles in small factories and at the same time earn something. Once we begin to work, we will find ourselves soon in our new mentality and our future generations will take them as matters of fact.

Change in Our Educational Policy.

I had said in the beginning, how we were suffering to-day because of our educational system. In our own city, we are now working under an act to make our primary education compulsory. We have made it free. We teach children from a number of books only. In 4 years, we shall have every year from over 120 primary schools, about 3,600 students, ready for high school. There are not enough schools to take all of them and we shall have to face the same tragedy every year which we now face for few hundreds after the Matriculation examination. And all these students will never want to do hard work of labour. They will become as useless as we have become. I would urge the people, the members of our School Board and the Karachi Municipality to wake up. It is not yet too late. We must urge Government and the School Boards to change our primary education curriculum. We must teach each child along with general knowledge of reading and writing, some hand craft. It will not be a greater strain on them than their books. They will enjoy it and will remain more healthy and joyful.

Home-Craft Movement.

In certain countries of Europe and America, there is a movement which is styled as the Home-Craft Movement. Many princes, capitalists, and well-known persons have joined this movement and it is now extensively pushed forward. It has two main activities: (1) Education for children; (2) Maintenance of families by self-work. In its educational policy, in each town, as near to it as possible, a large area of 1,000 to 1,500 acres is kept for teaching agriculture. Each school of the town is shifted by rotation to this area for 2 months in a year. In each rotation over 1,500 children are taught there. Every child is given a plot. The child is made to work according to age and standard and the lessons given are such that each child may be able to grow every year sufficient to eat for himself at least, and more for his family. This department, it is said, has become self-supporting and it is not a burden in any way for current expenditure. Thus a child is taught from the very beginning to work hard with hands and legs and thus when children grow up, they are not in any way ashamed of labour but are ready and proud to do it.

In this movement large areas of land are purchased by the supporters and families are housed there in small but comfortable houses. Each house has an open plot of one or two acres. The system has been so perfected that each family works to grow on that one or two acres and in addition certain hand-crafts when they are not required for field-work and each family is able to live on food which they grow on their plot and keep the members sufficiently maintained. Each family maintains in that self-contained area and it is wonderful to realize that by scientific and ideal methods for which points are taken to educate them all, it is now proved that one can get enough to live by hard hand work and by using brains, to maintain oneself. Both these experiments are worth making in our city. We have facilities enough to do it.

Forward to the Land.

The real salvation to remedy this disease of unemployment and to solve the Bread Problem seems to me to go forward to the land, in agriculture industry. The work on the soil will bring to us real happiness. With education, modern implements, researches, one can get more and more advantages of nature's mercy. I have told you something about the Home-Craft Movement. I can quote to you several instances how the movement of Co-operative Societies associated with agriculture can make mankind really contented and happy. About two years ago, I met a gentleman of California who called on me to sell raisins. I first laughed at the idea of buying raisins from California when one can get tons of them in our country from adjacent territories. He described them to me. What a power of producing economically was behind his company. Some years ago their company was a small concern. They were to-day 600 agriculturists who formed a Co-operative Society. They did away with all middle-men profit. They had to-day a world-wide organization. They spent Rs. 22½ lakhs in one year in advertisement alone. They had their own printing, box-making, packing departments and factories and they employed thousands of men to work on a co-operative basis to grow grapes, to dry them, to pick and sell all throughout the world.

ANOTHER AMERICAN EXAMPLE.

There is a company, the America and Sharon Land Company, about 90 miles away from New York. They started with a capital of Rs. 3 lakhs. By hard work and personal effort of each member, the Company possesses to-day not only land, but factories, elevators, houses and all amenities of a country healthy life. But do let us see what is happening very near us in Punjab. I advise you all to read the latest book of Mr. Malcolm Darling, "The Punjab Peasant in Prosperity and Debt". What a wonderful change has come there! Where a few years ago you saw deserts, you find to-day miles and miles of green fields. 2½ crores of acres of land are now sold and tilled by agriculturers; 20,000 villages have come into existence. Price of land from Rs. 12-8 per acre has gone up to Rs. 200 to Rs. 500 and more per acre. Land is used for improvement of seed, for horse-breeding, for camel-breeding, for cotton and seed improvement. To-day there is so much interest that whilst formerly 15% of land owners took to actual work, to-day 75% of them are actually on the fields attending to the development of their land. Graduates and educated men have begun to work. Crores of rupees are poured in that district every month and the whole province is getting prosperous.

I admit all will not become millionaires; all will not be rich; but we can earn a healthy, contented life and all can earn sufficiently to live and maintain their families. With modern ideals, life can become a continued joy. Reconstruction and establishment of happy villages, to work with our own hands and cottage industries should be our goal.

SUKKUR BARRAGE SCHEME.

Here is an opportunity. Let us not concern ourselves with the Engineering issue of Barrage; we see the canals and we see the water and land and let us look to what can be done. It is an opportunity we cannot miss. It can solve us from our daily struggles. We must urge Government to define their policy of land-sales. We must urge Government to make extensive preparations for experiments and education in agriculture. We must begin to think of farms, and forming Co-operative Societies. Co-operative work has come amazingly wonderful work. One can be an individual farmer and those who can invest and become such farmers. I urge them to go forward. For small investors or those who can put in little, I urge we must do extensive work of propaganda for Co-operative Societies, Co-operative Farms, Co-operative Villages.

I will give some idea of practical measures to be adopted in my next lecture how we can help towards the solution of the Bread Problem by association of Co-operative work and agriculture. But let us understand fully that as an individual or as a nation, we must be ready to do hard work and labour or we must face decay and death.

The Daily Newspaper.

By Paul Hutchin.

Glenn Frank is reported to have told some audience recently that if a man could not graduate from a university he should at least graduate from his daily newspaper. As president of the University of Wisconsin, it is the business of Mr. Frank to spread light and learning at large throughout that interesting commonwealth. But I cannot help wondering just what it was that, on this particular occasion, he had in mind. Where was the accent in the spoken sentence? Was it on the value of graduating *from* the newspaper that Mr. Frank was intent? Was he just gently spoofing the whole process of public instruction? Or did he mean it seriously? Is there an education worth having to be gained from the daily newspaper?

I am inclined to believe that Mr. Frank was in earnest. Some syndicate furnishes the evening paper which I patronize with about 300 words a day of Mr. Frank's copyrighted wisdom, along with which they throw in a half-tone portrait of the author. After looking at that portrait for six nights in succession—and as it is always printed just abaft the Gluyas Williams' cartoon, I generally do look at it—I have come to the conclusion that Mr. Frank is not the sort of person given to spoofing. He speaks seriously, not to say pontifically. And he, therefore, means to bring all the prestige of his distinguished career as a magazine editor, university president, lecturer, and now as a competitor with Dr. Frank Crane, Eddie Guest, and Mrs. Jack Dempsey for the syndicate championship, to the support of his dictum that we owe ourselves a newspaper education.

Undoubtedly Mr. Frank is right. And also, undoubtedly, the task which he sets before us

is one of the most formidable which our superformidable civilization can offer. We all live in a world of newspapers. Bruce Barton and a few other adventurous souls have tried to tell us that this is unnecessary; that we would get along just as well without reading the daily journals as we do now. Some of us incline to believe Mr. Barton is right. We agree with him—in principle. But the newspaper habit is too strong to be broken lightly, and we go right ahead spending thirty minutes every morning and at least an equal time every evening reading the daily papers with which we have become inoculated, and piling up in the cellar an endless contribution to the Salvation Army.

A "Newspaper Education".

But the question is, What am I to make of this mass of imprinted paper after I buy it? Mr. Frank says it ought to educate me. Educate me for what? We have in our house a woman of sterling character, born in this country, a product of our public schools, who helps my wife in the conduct of a menage which contains three uncrippled children less than ten and more than eight years of age. For years this woman has been reading daily newspapers. She had made a rite of it. She starts at the front page and she plows through to the back page, and she skips not a line *en route*. She gets up at five in the morning to begin this daily seminar course, and she is still at it when I go to bed at night. With what result? Well, to date her newspaper education has convinced her that no unmarried woman is safe except behind bolted doors after eight o'clock in the evening; that death and destruction range at large through the streets of our nearby city; that it is only a question of time until our own still comfortable family establishment will be disclosed as a blind for the conjugal infidelities of (1) myself, or (2) my wife, or (3) both. In other words, she lives in a world of terror, deceitfulness, and almost unadulterated wrong. And she has delivered herself to this sort of a nightmare by believing everything she ever saw in print.

It is in order, however, to ask how such an outcome is to be avoided, provided the newspaper reader takes the newspaper seriously. I think that the only possible method is by spending a little time learning what a newspaper is. That, it seems to me, should be the first course in this journalistic education which few of us dodge and which Mr. Frank recommends. If the newspaper is not to distort beyond correction our view of the world, we need to plant deeply in our minds a few simple facts as to what it is we hold in our hands when we bring the familiar roll in off the front porch tomorrow morning.

In the first place, the daily newspaper is a product of organization. It is in many ways the most wonderful product of organization that we have have in our communities. Sit down with a single issue. Here are items from perhaps two dozen foreign capitals. One of them is from Teheran. Have you ever tried to get into or out of Teheran? Do you have any idea of the slenderness of the cord which ties Teheran up even with London, let alone your town? Then there are items from interior towns in this country of which you never heard before. Remember Dayton, Tennessee. For almost a month last summer the newspapers felt it necessary to have over 100,000 words a night telegraphed out of Dayton, a town with normally one part-time telegraph operator and a single key—and they got them! But the newspaper is such a marvellous product of organization that it takes the events of yesterday in all these remote places as seen by all these remote people and gives you some kind of a report of them, all within twenty four hours.

Allowance to be made for Haste.

That leads to the second consideration. The newspaper is not only a product of superorganization; it is also a product of haste. The one factor that a writer for a daily newspaper is not allowed to forget is the "deadline". That is the minute after which material cannot be received if it is to be printed in time to let the paper be mailed on the proper trains. There is probably no business in the country which feels the demand for speed to the extent that daily journalism does. On evening papers this means that, in the large cities, reporters no longer take time to write their stories; they telephone them to offices in which there are other men trained to listen to a few facts bawled at them over the wire and to turn those facts into half a column or more of copy in the time that another inning is being played at the ball park and the first page is being made up over again for the three star sporting final Wall Street complete edition. Reporters for the morning papers work at almost equal speed. If they have time to interview at length four witnesses of the event to which they have been assigned, they feel that they are working at leisure.

Do you remember the last Woman's Foreign Missionary Society convention you engineered? The one when you had Miss Seraphic, the famous missionary to the outcaste Bombojos,

as the main speaker? How careful you were to see that the local newspapers knew all about it. How careful they were to assure you that they would give your meeting a good write up! And then the two girl reporters—evidently tyros—came at 7.35 and left at 8.2! But you got your half-column next morning, although it was clear to the discerning reader that the account lacked a little in accuracy of detail. Well, why didn't the reporters come at the beginning and stay to the end of your meeting? The only reason, of course, was that their newspapers had only about ten local reporters each available that night—a majority of dailies will have a lot less than ten—and that those girls had to cover, besides your meeting, the meeting of a P. T. Association, the annual banquet of the Eastern Star, the monthly squabble of the board of education, and perhaps write two columns on the free trip to the sea-shore or the free ice cream cones being given by their philanthropic journals to the waifs of the second ward. Speed!

THE PRODUCT OF PREJUDICE.

Then, too, this paper is a product of prejudice. No matter how good, there isn't a newspaper on earth but has its prejudices. These are formed, generally, in the mind of the proprietor. A certain New York newspaper, years ago, had a proprietor who was prejudiced in favour of nature-faking stories. It gradually became known that any correspondent who had a story about a two-headed calf or a four-legged hen which quacked like a duck and climbed trees could sell the story to that paper. That proprietor passed on a long time ago, but that prejudice remains with that paper, and it carries every year a wondrous collection of animal stories. Prejudice works both ways. The proprietor likes to see some things in his paper, and you can bet that the men who receive their pay checks from him see that they get in. He dislikes other things, and it will be astonishing how seldom they appear. The late James Gordon Bennet had an aversion to Theodore Roosevelt. Mr. Roosevelt garnered more publicity than any other mortal who ever lived but for a whole year the *New York Herald* managed to appear without ever mentioning his name. It took the shooting of Mr. Roosevelt by an unbalanced man to raise him from the dead, so far as the *Herald* was concerned. Nor is it only the proprietor's prejudices which colour the paper. Every human link in that far-flung organization adds his mite.

The paper is also a product of business. William Allen White told me last summer how he went into Emporia, Kansas, with $3,000, and bought and developed one of the most famous small-town dailies the country has ever known. "But," said Mr. White, "if I wanted to do that to-day, I would need at least $50,000." That, mind you, is to establish a newspaper in a town of about 10,000. What must be the costs involved when you are dealing with a population by the million! The first necessity for the newspaper is that it pays. There are only a few endowed newspapers, either directly or indirectly, and the evidence is not yet sufficient to show that endowment improves them.

THE HIGH COST OF NEWSPAPER PUBLISHING.

A newspaper is a business; it must pay. What makes it pay? Advertising. The white paper alone costs more than you contribute as a subscriber or news-stand buyer. And advertising comes as a result of circulation. So that the paper is a result of a never-ceasing competition between paper-makers to get circulation. And circulation comes easiest at the loudest call. In terms of journalism, the loudest call is the biggest type, the biggest or most daring pictures, the most violent inks—sensationalism.

The British have a good term for this sort of thing, which overshadows their press as much as it does ours. They speak of "the stunt press" To the newspaper after circulation and determined to get it by whatever means, the whole business becomes a stunt—a sort of vaudeville in type—and the most extravagant stunt performer is the man who reaps the largest financial return. The managing editor of a paper with the largest evening circulation in the United States was asked by a trade paper on what grounds his paper had dared to indulge in some of the bestial stunts it used to play up the dirtiest case which has been dragged through our courts in a long time. "I won't defend publication of details of this case on any moral grounds at all," he replied. "It is purely a circulation matter." At least, he was candid!

One thing more needs to be said. The newspaper is also all too often a product of rumour. Here that element of speed enters again. A whisper reaches the editorial or reportorial ears. Confirmation will take time or trouble. The deadline is in sight. What is easier than to print, using phrases that carefully skirt the laws of libel, and thus guard against any possibility of some rival scoring a "beat"? Or again, rumour may be, and often is, deliberately used to put across ideas which the newspaper favours. When you see "an

informed party who must not be named" or "quarters close to the principals" named as sources of report, you can lay seven to three that the mysterious and anonymous author of the rumour is the reporter himself, using this method of starting something which he wants to see started.

Check up on the Paper.

All of which brings me back to my original proposition. If we are to graduate from the education offered by our newspapers, as most of us are trying to do, we need to know what our text-books are. We need to know that no single newspaper is a finality, for there is always another coming to-morrow which will add or subtract from the story of to-day. We need to know that it is the product of a marvellous organization which rambles all through the earth, and by that token gives a multitude of minds a chance each to put their individual slant on the resulting total. We need to know that the special interests, the point of view of the paper and its proprietor find their way into every day's selection of news and into every headline. One of the main causes of a warped world-view arising out of the newspapers is that too many of us read only the headlines. And finally we need to know that the only way in which we can reach an approximately sound judgment as to the amount of credence we can place in the newspaper we read is by constant process of checking up

That really is a simple thing to do. Watch the items that are printed from various correspondents. Certain date-lines occur again and again: New York, Washington, London, Riga, Tokyo Make it a point to remember whether the Riga writer was 100% right day before yesterday, or only 50%. Soon you will find yourself doing this almost automatically. And soon you will be able to read without being unduly led astray. The same process should be applied to the paper as a whole. In its general point of view, in the things which it says are important, in the things which it ignores as unimportant, does time bear it out as right, nearly right, partly right, a bit right, or a bit wrong, partly wrong, nearly wrong, or just plain wrong! The application of such ordinary intelligence to the job is necessary if the text-book in this morning and evening university is to instruct and not bemuddle in any manner.

Education in Mysore.

By D. Venkataramaiya, B.A., L.T.,*

Circle Inspector of Education (Retd.)

For a proper handling of the educational needs of a particular geographical area independent upon the right conception of the aim and object of education. Now it is rather hard to define the term "Education". Not that no attempt has been made to define it. Quite a variety of definitions, we find, each one embodying and emphasizing more or less its different places. The fact is that the view-point shifts as time changes.

The mediæval conception of Education in Europe, for example, differed from that of the later centuries. The preparation of the individual for the other world was the one aim of education and little or no effort was considered essential to prepare him for the requirements of this world. The result was that all teaching was practically in the hands of the priest and the monasteries alone were the seats of learning. With the advent of the Renaissance and its potent sequel, the Reformation, the old idea of education gave way and more and more of the actual work-a-day conditions entered into its concept. Other changes swept over Europe as the centuries rolled by and men's notions of education also underwent rapid transformation. The Industrial revolution, the invention of machinery, the powerful teachings of educational reformers like Voltaire and Rousseau, the French Revolution, the advance of Science and the Social re-construction have all had their share in altering the aspect of education. The latest factor to disturb the accepted doctrine of education is the great European War. Statesmen and Educationists are still under its influence and have yet been trying to adjust the educational machinery to serve the needs of the people. Our own country is not behind-hand Europe in presenting a varied and interesting History of Education into the details of which we need not enter. It is enough to mention the landmarks to give an idea of the tremendous changes wrought in the history of Indian education. The ancient

* Part of an address delivered before the District Educational Conference, held at Tumkur, on 21st May 1926.

Vedic ideal with its emphasis on the importance of the priest and the ritual, the epic hero-worship, the Buddhistic monastic system, the Hindu revival, the Muslim domination and its impact upon the indigenous culture and finally the British conquest and the far-reaching changes that have followed in its wake.

Our own State has been as good a partner as the rest of India in the varying fortunes of Educational progress in the country and the system that is now in vogue is practically the same as that obtaining in British India. The earliest attempt on the part of Government to imitate this new model may be traced back to the year 1868 when Mr. Rice, the then Director of Public Instruction, established what were known as Hobli and Taluk schools. The main object in bringing these schools into existence was the spread of education among the masses, particularly in the outlying regions of the Province. The content of instruction was confined to the three R's and the medium of instruction entirely Vernacular. This aim was for long kept in view though the introduction of the Kindergarten method of teaching during the regime of Mr. Bhabha helped much to alter the antiquated and unscientific process of teaching. Education spread, no doubt, but not as rapidly or as extensively as the Government had desired. The apathy of the people on the one hand and the *laissez fair* policy of Government on the other left matters where they were and illiteracy stood at a high percentage.

In 1913, however, a great forward step was taken by the inauguration of a policy of vigorous educational expansion by that distinguished and patriotic Dewan Sir M. Visvesvaraya. As the outcome of that policy there was a vast increase in the number of schools and of scholars. Illiteracy was to a great extent reduced and the torch of knowledge lighted up many a dark recesses of the country. High Schools were strengthened by efficient recruitment and to crown all the Mysore University was founded.

On the side of technical education as forming part of general education, we are still in the experimental stage. The Agricultural and Industrial schools are outside the jurisdiction of the Education Department and the attempt to combine general education in Middle and High Schools with vocational training is yet in the initial stage and even the latest experiment in this direction may not be fruitful of much good. The reason is that in the first place the provision made is inadequate and in the second place there is no effective demand for such combined education on the part of the people.

Now judging of any scheme of education we have to examine its fitness to serve the needs of those for whom it is intended; in other words, we come back to the question of definition. Without attempting to be too exact, we may rest satisfied with considering education in so far as it bears upon (1) Politics, (2) Economics, and (3) Ethics and Religion.

Do not be startled when I mention politics in connection with Education. I do not mean that any party politics should influence educational policy: that would be disastrous move. It is well known, however, that political aims and objects do often materially influence educational policies. The pre-war German Kultur was in a great measure the outcome of German political thought and feeling, the Japanese system of education is coloured through and through with sentiments of strong loyalty to the person and throne of the Emperor. Here we are more concerned with the benefits that education confers upon the people enabling them to take a real and intelligent interest in the affairs that affect them as members of the body-politic. It is a truism that unless education spreads far and wide, democracy is meaningless, for an ignorant electorate will become a mere plaything in the hands of designing men. One of the chief objections urged against the granting of full self-governing powers is the existence of an appalling quantum of illiteracy in India. What is the condition of things in Mysore? According to the latest Report on Public Instruction in Mysore, the percentage of scholars to the total population of school-going age is as follows:—

Boys and Girls ...	.. 34.83
Boys	.. 55.21
Girls	.. 13.89

Compared with the figures of the previous year, progress in primary education has remained stationary.

Another table of greater significance is the one relating to the distribution of scholars between the different grades of schools:—

	Boys.	Girls.
High Schools	3.05	.36
Middle Schools, including Incomplete Middle Schools	12.26	4.18
Primary Schools	84.56	95.42

From the Primary stage only one-seventh of the boys proceed to the Middle Schools and of them again only one-fourth to High Schools. This is not encouraging. It means that the educational machinery is defective. The Inspector-General of Education remarks in this

connection, "the large proportion of pupils in Primary Schools, as compared with the number of Middle and High Schools, is a matter requiring serious consideration. The strength in the 1st year class generally exceeds the strength of the 2nd, 3rd and 4th year classes put together. The great majority of pupils remain for two years and even more in the 1st year class and leave school without getting into the 2nd year class and the great majority inevitably lapse into illiteracy." This is a long-standing complaint. It was expected when the Compulsory Education Regulation was introduced that illiteracy would gradually dwindle down and Mysore would ere long lead the way in mass education. But no movement, however noble in its inception, will bear fruit unless backed up by sustained effort. A large percentage of children are still denied the elements of education and they grow up in ignorance. Two causes seem to operate in baffling the efforts of Government to bring about the wished-for result, one the lack of local interest on the part of the parent and the other, the absence of a sense of duty on the party of the teacher. Whatever the causes, the result is these and a remedy should be found to wipe out the stigma of illiteracy so as to enable the great body of the public to take an intelligent part in the local and provincial Governments. Cannot the District Boards render effective service in this respect? Is it not time, I ask, for them to take over the management of Primary Education under their ægis? The advantages are manifold. Too much of centralized administration is not likely to rouse sufficient interest in people in educational matters and it produces a somewhat dull uniformity. Government management, however efficient, cannot be adequate and unless the men in the locality earnestly study their own needs and concert proper measures, the result cannot be satisfactory. It is the people's voice that should prevail in what is one of their vital concerns. The District Board's Regulation empowers the District Boards to deal with questions relating to the development of education and in collaboration with the newly created Village Panchayets, they may assume full responsibility as regards Primary Education. It should not be difficult to define the respective jurisdiction and powers of the District Board and the Education Department.

Before passing on to the next topic, may I observe that the hopes raised by Government to convert all aided schools within a specified period into departmental institutions has somewhat retarded private enterprise so that many a grant-in-aid school has closed down for lack of sustained interest. Here is an excellent opportunity for the District Board to revive these private schools.

In its relation to Economics the Education of the Middle and Higher grades comes in for consideration. At a time when purely literary courses were sufficient passports to Government service, the economic bearing of Education was not of much vital importance but at present, entry into Government services is becoming extremely difficult, not for one class but for all classes and other walks of life being barred against young men, just fresh from schools and colleges as their equipment is not of much practical value, the question of revising the curricula of studies so as to give them a utilitarian turn demands urgent solution. Attempts to give an industrial bent to school and college instruction have not been hitherto successful. The so-called unitary type of Middle Schools has been in my opinion a failure. What the country requires is a network of Industrial and Agricultural schools working side by side with the general schools. To me it seems an unsound policy to require pupils of all grades and ranks to pass through a rigid system of Education which gives absolutely no facilities for the development of varied interests and capacities.

Again, the different grades of schools require proper co-ordination. The complaint in other countries as with us is that the Universities dominate the schools. The entrance requirements determine wholly the curriculum of schools with the result that for those who have no means of pursuing a college career, the studies in the schools are but blind alleys. The most urgent problem, therefore, is how to articulate the difficult grades of Education so as to prevent educational and financial waste.

The whole point is that there ought to be considerable scope for freedom in the construction of the Educational Ladder.

The Kindergarten may lead to Middle School which in its turn either to the High School proper or to Agricultural and Technical schools; the High School again, either to College or to Higher Technical Institutions.

The Place of Vernacular in the scheme of studies should receive careful consideration. Without going into details of this question, I may at once state my considered opinion. Our vernaculars have received a great setback by the Fetish we have made of English.

There is no reason why purely Kannada and Hindustani Middle Schools should not exist and the vernacular Middle School examination placed on a permanent footing. To give a further impetus to the study of Kannada, it is desirable that the medium of instruction in all grades upto and including High Schools should be in the mother-tongue.

Just a word about the position that Ethical and Religious teachings should occupy in our Educational Institutions. From a perusal of the Annual Reports of Public Instruction in Mysore, you will find that the question has not been tackled with any degree of earnestness. High Schools and Colleges have definitely shelved the Government Regulation in this behalf, while in Primary and Middle Schools instruction in Religion and Moral is carried on in a haphazard manner. No doubt the problem of Religious Instruction is complicated by communal and sectarian considerations, but if we believe in the importance of this subject as an essential aid in the building up of character of the youth of the country, we must take a more serious view of the matter and arrive at a satisfactory solution.

In this connection I may perhaps touch upon the study of Sanskrit. Apart from the studies provided in the two Sanskrit Colleges at Mysore and Bangalore, no adequate provision exists for the spread of Sanskrit Education. It is a pity that we have been evincing no enthusiasm for a knowledge of the Deva Bhasha in which is locked up the ancient wisdom of our land. The present-day indifference to Religion and Philosophy is traceable in a great measure to the systematic neglect of Sanskrit. I need not emphasize its cultural value. The whole question of Sanskrit Education has been investigated in detail by a committee appointed for the purpose and their report is before Government. It is to be hoped that the recommendations embodied therein will receive sympathetic consideration at the hands of Government and I trust the District Board will wholeheartedly lend their support to any scheme that has for its object the expansion of Sanskrit Education.

Gentlemen, before I conclude, I should like to disabuse your minds of any impression that I may have created in that I have emphasized rather too strongly, the drawbacks of the existing system of Education. Everyone of us is keenly alive to the great and lasting benefits conferred upon the people by the beneficent measures that the Government of our beloved Maharaja have introduced from time to time. To mention only some of the outstanding features of Education Organization in the State, calculated to foster and develop Education in all its aspects, I may draw attention to

(*i*) Elementary Education Regulation.

(*ii*) The abolition of Fees in Primary and Middle Stages.

(*iii*) The institution of liberal scholarships for the benefits of Backward communities.

(*iv*) Creation of facilities for the Education and upliftment of Depressed Classes.

(*v*) Expansion of High School Education.

(*vi*) The founding of the University.

But as I have stated in the beginning, the problem of Education is a difficult and complicated one and can never be solved once for all. New questions from time to time press for solution, necessitated by changing needs and circumstances and to meet them successfully it requires the combined effort of both the Government and the public. That is the reason why I have drawn pointed attention to some of the questions that are at present awaiting solution.

Uses of Charcoal.—It is the simple things at hand, the virtues of which are not known. Things sold in bottles have their merits advertised.

Besides being valuable as fuel, charcoal has other uses which make it one of the most serviceable of articles, in a household, ground into a powder. When laid flat, while cold, on a burn, it lessens the pain, and by leaving it on for an hour the burn seems almost healed when the wound is superficial. Tainted meat surrounded with it is sweetened. Foul water is purified by it. It is a great disinfectant, and sweetens offensive air if placed in shallow trays round the room. It is so porous that it absorbs and condenses gas very rapidly. One cubic inch of fresh charcoal, it is said will absorb nearly one hundred inches of gaseous ammonia. Charcoal forms an excellent poultice for bad wounds and sores. In cases of what is called proud flesh it is invaluable. It gives off no disagreeable smell, corrodes no metal, hurts no texture, injures no colour and is a simple and safe sweetener as well as a disinfectant. A teaspoonful of charcoal in a half glass of water often relieves a sick headache. It absorbs the gases and relieves the distended stomach, pressing against the nerves which extend from the stomach to the head.

International Economic Conference.

Meeting of Preparatory Committee.

Geneva, 1st May, 1926.—The League of Nations Preparatory Committee of the International Economic Conference met at Geneva from April 26th to May 1st.

After examining in a general discussion what questions should be studied, the Committee appointed three committees A, B, and C. Each drew up a programme of work and general recommendations, the execution of which was entrusted to the Secretariat and the International Labour Office working in collaboration with the members of the Preparatory Committee and the International Chamber of Commerce, the Institute of Agriculture at Rome and other organizations.

The main feature of the programmes is the collection of information on the questions selected by the committees. This material which is to form the basis for the agenda of the Economic Conference, will be examined by the Preparatory Committee at a second session, to be held in October.

COMPOSITION OF THE PREPARATORY COMMITTEE.

M. Gustave Ador, who had presided at the Brussels Financial Conference in 1920, and had been appointed by the Council to the chairmanship of the Preparatory Committee, was prevented by ill-health from attending. M. Georges Theunis, former Prime Minister of Belgium, was unanimously elected Chairman. There were also present :

M. ANTONIO CARLOS (Brazilian), Former Financial Minister.

RIBEIRO DE ANDRADE (Brazilian), Senator; President of the State of Minas Geraes.

SIR ARTHUR BALFOUR (English), Member of the Royal Railway Commission in 1913; Member of the Advisory Industrial Committee of the Treasury during the war; Director of the British Trade Corporation, 1922; President of the Association of British Chambers of Commerce, 1923, etc.; President of the Trade and Industry Committee, etc., etc.

M. ERNESTO BILLONI (Italian), Specialist in the Chemical Industry, Member of the Interallied Committee for Reparations in kind; Italian Assistant Delegate to the Assembly of the League of Nations; Rapporteur on the Economic Conference of the Second Committee of the Sixth Assembly.

M. CARLOS BREBBIA (Argentine), Former President of the Chamber of Commerce of Rosario de Santa Fe; Argentine Delegate to the International Agricultural Institute in Rome.

M. F. CAMBO (Spanish), Barrister; Former Financial Minister and Minister of Public Works; Legal Adviser to various banking institutes in Spain and abroad.

M. ALPHONSE COSTA (Portuguese), Former Prime Minister and Financial Minister; Former Professor of Political Economy; President of the Special Assembly of the League of Nations, March 1926.

SIR ATUL CHANDRA CHATTERJEE, High Commissioner for India in London.

M. LEOPOLD DUBOIS (Swiss), Chairman of the Financial Committee of the League of Nations; President of the Swiss Banking Corporation.

M. W. EGGERT (German), Member of the Committee of the General Federation of German Trade Unions.

MME. EMMY FREUNDLICH (Austrian), President of the International Guild of Co-operative Societies.

MR. ARTHUR WITTER GILBERT, Agricultural Commissioner for the State of Massachussetts; President of the International Agricultural Committee in Rome.

M. GLIWIC (Polish), Director in the Ministry of Commerce and Industry.

DR. F. HODAC, Secretary-General of the Association of Czechoslowak Industries; Member of the Temporary Mixed Commission for the Reduction of Armaments; Member of the Employers' Group of the Governing Body of the International Labour Office.

THE HON. DAVID HOUSTON (American), Former Secretary of State for Finance; Former Secretary of State for Agriculture.

M. JOUHAUX (French), Secretary-General of the General Labour Federation; French Delegate to the Assembly of the League of Nations; Member of the Workers' Group of the Governing Body of the International Labour Office.

M. A. G. KROLLER (Dutch), Shipowner; Member of the Economic Council of the Dutch Foreign Ministry; Dutch Member of the Central Commission for Rhine Navigation; Member of the Sub-Committee on Ports and Maritime Navigation of the League of Nations; Member of the Special Committee on the jurisdiction of the European Danube Commission.

DR. CLEMENS LAMIERS (German), Member of the Council of the German Industry Federation; Legal Adviser of various financial concerns and economic groups.

MR. W. T. LAYTON (English), Director of the "Economist"; Former Member of the Munitions Board; Former Director of the International Iron and Steel Federation.

M. BOGDAN MARKOVITCH (Serb), Director-General of the Credit foncier of the Kingdom of the Serbs, Croats and Slovenes; Member of the Supervisory Commission of the League of Nations.

M. KENGO MORI (Japanese), Expert and Agent of the Japanese Government in Europe.

M. ANDERS OERNE (Swedish), Post-Master-General; Former Minister of Communications; Director of the Swedish Central Co-operative Organization; Member of the Governing Body of the International Co-operative Union.

M. J. OUDEGEEST (Dutch), Member of the Workers' Group of the Governing Body of the International Labour Office; Secretary of the International Federation of Trade Unions.

M. H. PAUWELS (Belgian), Secretary-General of the Belgian Federation of Christian Trade Unions.

M. HENRI DE PRYERIMHOFF DE FONTENELLE (French), President of the Central Coal-mines Commission.

M. ALBERTO PIRELLI (Italy), Member of the League Economic Committee; Member of the Supreme

Economic Board in Italy; Former Member of the Governing Body of the International Labour Office.

MR. SHAW (British), Secretary-General of the National Weavers' Union (substitute for Mr. Pugh, President of the General Council of the Trade Union Congress).

M. ARMANDO QUEZANA (Chilian), Minister Plenipotentiary of Chile in Paris; Former Financial Minister; Former Minister of Foreign Affairs; Former Senator; Professor of Political Economy at the University of Santiago; Author of works on Political Economy; Former Member of the Governing Body of the International Labour Office.

M. ESTABAN JARAMILLO (Colombian), Senator; Former Minister of State (substitute for M. Salazar).

M. D. SERRUYS (French), Member of the League Economic Committee; Director of Commercial Agreements in the Ministry of Commerce.

MR. ADAM SHORTT (Canadian), Former Commissioner of the Canadian Civil Service; Former Professor of Political Science at "Queen's University".

SIR HUBERT LLEWELLYN SMITH (English), Member of the Economic Committee of the League of Nations; Economic Adviser of the British Government; Labour Commissioner of the Board of Trade, 1893; Permanent Secretary of the Board of Trade from 1907 to 1919; Comptroller-General of the Trade, Labour and Statistical Departments of the Board of Trade from 1903 to 1906; Secretary-General of the Ministry of Munitions in 1915.

M. DE STEFANI (Italian), Professor of Political Economy; Former Minister of Finance.

M. Y. SUGIMURA (Japanese), President of the Committee on Communications and Transit of the League of Nations; Chief of the Japanese League of Nations Office in Paris; First delegate of Japan at the Second Conference on Communications and Transit.

M. ERNEST TRENDELENBURG (German), Secretary of State in the German Economic Ministry; Participant in the Brussels Financial Conference in 1920. Economic expert of the Committee that organized the system of industrial obligations of the Dawes Scheme; Negotiator of the Franco-German Commercial Treaty.

PROF. ALLYN YOUNG, Professor of Political Economy at Harvard University; President of the American Economic Association.

In appointing the members of the Preparatory Committee the endeavour was made to make this body, both from an international and technical point of view, representative of the economic life of the present day. As shown by the above list, the Committee includes members with personal experience of business and industrial affairs; qualified representatives of the workers' and consumers' classes; former ministers and high officials experienced in dealing in their own countries with the various interests represented; scientists and experts who have already taken part in the work of the League technical organization or the International Labour Office.

THE PROCEEDINGS.

In the opening speech prepared by M. Ador, which was read at the beginning of the meeting, the Chairman alluded to the aim which the Assembly and the Council had in view when convening the Committee; he emphasized that they both desired to make an effort to reduce the number of opportunities for international conflict afforded by rivalry between economic interests and, in view of the present crisis, to examine the possibility of an international discussion of the most effectual methods for restoring general prosperity.

He drew attention to the necessity for methodical preparation, in order that the discussions should only begin when a perfectly clear programme of carefully defined questions admitting of practical solutions had been established.

He then defined the task of the Committee. In his opinion it was not called upon to furnish a solution for the various theoretical or practical problems which might arise out of the present economic situation of the world, but when it considered its conclusions sufficiently well grounded—to submit to the Council which would follow its work sitting in special committee—a report on the programme, the composition, the rules of procedure and the date of meeting of the Economic Conference.

During the first two days the various members expressed their views as to the subjects which they considered should be studied and the procedure subsequently to be adopted.

The Chairman then drew up a list of questions, the inclusion of which in the programme had been suggested in the course of the general discussion and divided them into three groups. For each group of questions a special committee was constituted—including representatives of the various classes represented on the plenary Committee (business men, workers and consumers; persons with administrative experience; financiers and economists). The Chairman drew attention to the fact that this division of work and the composition of the committees did not in any way commit the Preparatory Committee in its ulterior proceedings.

To Committee A was entrusted the study of questions bearing upon agriculture, finance and population. It elected as Chairman M. Belloni (Italy) and set up two sub-committees; one, under the chairmanship of Mr. Witter Gilbert to deal with agricultural questions, the other for financial questions. M. de Andrade, who was elected Chairman of the second sub-committee, was replaced towards the end of the session by M. Dubois.

Committee B. (Chairman: M. Hodac) dealt with problems of industrial production; Committee C. (Chairman: Professor Allyn Young) with questions relating to trade and markets.

Each of the three committees drew up a programme of work for the coming months and instructions regarding the information to be collected.

The Programme.

The reports of the three committees, which were unanimously adopted, were approved at a plenary meeting of the Preparatory Committee. Each of the reports contains a list of questions upon which the League Secretariat and the International Labour Office, collaborating with various international organizations, are to collect information which will serve as a basis for the programme of the Economic Conference.

The material to be furnished in regard to problems concerning *industrial production* includes a memorandum giving, in a general form, a table showing the economic situation of the entire world with regard to production and international trade; and a series of special papers on a number of key industries, including those particularly affected by the present crisis—coal, iron and steel, engineering, shipbuilding, cotton—and certain industries which are of special interest from an international point of view—wool, chemical products (particularly potash), electrical engineering, silk and artificial silk, petroleum, a special investigation will be made with regard to the following questions:—

The position in the various countries as regards legislation and administrative action affecting industrial and international agreements.

Rationalization and standardization in industry.

Technical scientific progress and research.

Recruiting and training of technical staff.

Improvement of conditions of labour.

Delimitation.

Arbitration.

With regard to *commerce and markets* information will be collected on questions relating to freedom of trade, tariffs and commercial agreements, direct and indirect subsidies, the distribution of goods, unfair commercial practices, judicial obstacles to international trade, etc.

The statistics to be drawn up on *agricultural questions* will bear upon production, prices, consumption and stocks, as well as on the successive links in the chain which connects production with consumption.

In regard to *finance* the documentation will concern public finance, monetary systems and credits, the balances of payments.

The information to be collected with regard to population questions bears upon the natural movements of populations; births, deaths, marriages; the artificial movements of population (emigration in its various forms); the fluctuations of population arising out of the world-war, and fluctuations in potential labour forces; the population density in relation to cultivable areas, natural resources on the surface and underground; data concerning economic development and the standard of life; legislation on the movement of labour and international migration in general.

The work, in which the members of the Committee have been invited to co-operate, will be performed under the guidance of the Chairman of the Preparatory Committee, the Committees A, B, C. and the Sub-Committees.

With regard to certain questions of commercial policy it was decided that memoranda should be drawn up by experts. The International Institute of Agriculture at Rome will be requested to supply information on agricultural questions. The International Chamber of Commerce and the Office of the Emigration Conference at Rome will also be invited to co-operate.

The Chairman of the Preparatory Committee and the Committees A, B, and C will remain in communication with one another in order to be able to take any action which may be necessary between the sessions.

The general trend of the work and the methods to be employed were clearly outlined by the Chairman of the Committee on Industrial Production, M. Hodac, and, in his closing speech, by M. Georges Theunis, Vice-Chairman of the Preparatory Committee. M. Hodac pointed out that for the moment all that was necessary was to ascertain the facts of the situation the investigation of their causes being reserved for the next session of the Preparatory Committee and the seeking of remedies for the Economic Conference itself. He added that at the next session of the Committee the second stage of the enquiry might be reached. At that moment the Committee proposed greatly to extend the co-operation in its work of private producing circles, a factor which was one of the characteristic features of the Conference.

M. Theunis drew attention to the fact that the collection of the necessary statistical

information was only part of the preparatory work necessitated by the Conference.

"By preparatory work", he said, "three things are meant. In the first place, and this is perhaps not the most important point, it means the collection of statistical and other information.

Secondly, we need to examine the implications of this information, its meaning and the conclusions to be drawn from it, bearing in mind the points of view of all concerned. The composition of our committee affords every guarantee that this will be done.

The third point is the preparation in the widest sense of world public opinion, without the support of which the Economic Conference cannot succeed.

Working separately, each of our committees has drawn up instructions for those who in the months to come will have to collect information. One committee has given detailed instructions; another has confined itself to sketching the main outlines of the enquiry. In each case the recommendations are practical ones, which will be understood by those who, after taking part in our discussions, will be called upon to take charge of the enquiry, and each question will keep its relative importance in the general scheme.

The task of collecting the information required will be a heavy one, but the essential thing if the Economic Conference is to open with good prospects of success, is not an accumulation of detailed information; what is wanted is an effort to pick out the main factors of the vital problems for which satisfactory solutions may be found by means of an international discussion.

I have no doubt that this principle will be acted upon by all those who take part in the work of collecting information, and that we shall thus be in a position at our next session to select the points on which our attention and our efforts can usefully be concentrated."

Economics in the West.

Assessment for Income-Tax.

London, April 27th, 1926.- One of the subjects for discussion at the meeting which is arousing a great deal of interest is the resolution put forward by the London Chamber of Commerce that the time has come when neither the revenue nor the taxpayer would be prejudiced by the abandonment of the three-years' average system of income-tax and super-tax assessments on business profits, and that, accordingly, the substitution of a year-to-year system, based upon the profits of the preceding year, be recommended. When this subject was discussed a year ago there was a large majority in favour of the three-years' system, and it seems probable that Manchester, Bradford and other important Chambers in the North will oppose the motion by London. If that should prove to be the case, the discussion will be very interesting.

India in London.

Following the example of other British Dominions, the New Zealand Government has purchased the premises of the British Medical Association in the Strand, at the corner of Agar-street, to be the headquarters of the High Commissioner. The Dominions are now in possession of commodious offices of their own in Central London for the discharge of administrative work and the promotion of trade relations with the Mother Country. But the High Commissioner for India, the portion of the overseas possessions of the Crown which is the best customer for British goods, remains inconveniently and inadequately housed in three houses built for private occupation in Grosvenor-gardens. It is a matter for satisfaction that proposals to remedy this anomaly are under the consideration of the Government of India and the Secretary of State. The provisional scheme takes into due account the fact that the High Commissioner for India, in his capacity as the direct agent of the Government of India, supervises the work of the Indian Trade Commissioner. On grounds of retrenchment the office of the Trade Commissioner was moved three years ago from the City to Grosvenor-gardens, and though Mr. Lindsay attends at the office of the London Chamber of Commerce on Tuesdays and Fridays to meet the convenience of business men, there can be no doubt that he is hampered by his small staff and records being housed, and by the bulk of his work being done, so far from the City. While the Dominions advertise by conspicuous quarters in or near the Strand their commercial products and general importance, the official representative of Indian trade interests is located where there is no pos-

sibility of attracting the attention of the general public to a display of Indian products. Removal to a more central situation is a pressing necessity. Strong exception might be taken to a State-organized centre being utilized for the actual sale of Indian products. But it is quite another matter to establish in a suitable location, as part of the office of the High Commissioner, a show room where visitors could see Indian products, be given trade information, and be referred, if desiring to make purchases, to recognized firms or agents. Such a show room would stimulate interest in Indian art, wares, and manufactures and would help to maintain standards against the constant risk of inferior imitations. It is not thought desirable to include in the show room raw materials of the big staple products, such as jute, cotton, tea, grains, and oil-seeds. The trade in these is well organized, and it is felt that there would be no particular advantage in showing small samples in the inevitably untidy heaps of a miniature display. But quite apart from these products, there is ample scope for a show room in a central situation in combination with an information bureau designed to promote British and Indian trade relations. A step now taken in the right direction has been the appointment of Mr. B. D. Asli, who was in charge of the Bombay Court at Wembley in 1924, to assist the Trade Commissioner in exhibition and publicity work.

British Motor-Cars in Australia.

In a letter from Dr. Richard Arthur, a member of the New South Wales Legislature, published in *The Times* on Tuesday, it was stated that the business men of Great Britain need waking up and reference was made to the fact that only about 8 per cent of the motor cars sold in Australia are British. It must be remembered, however, that this state of affairs is not due to the sleepiness of British manufacturers but to the growth of the car trade of Australia which occurred during the war when money was plentiful in the Commonwealth. British firms could not supply cars then or for some period after the war and their American rivals were consequently able to secure the best agents, so that when British motor manufacturers were again in a position to consider Australian trade they found great difficulty in arranging for good agencies. Happily, these difficulties are now being overcome so successfully that the president of the Australian Association of British Manufacturers, in his speech, singled out the British motor-car industry as one which, "despite the handicaps imposed by the war, is sending to Australia domestic and commercial vehicles, competitive in price adapted to Australian conditions, and unsurpassed in workmanship and reliability. The number of British chassis imported into Australia increased from 2,001 in 1923 to 10,484 in 1925."

Mining Crisis.

We advise our readers not to pay too much attention to the conflicting reports concerning the negotiations for the settlement of the dispute in the mining industry, but the one outstanding fact that must give rise to anxiety is that the sand in the glass is falling, and that every day's delay means the loss of contracts, because British collieries are unable to quote prices for delivery after May 1. There is still ground for hope that agreement will be reached, though on the one hand the miners have declared that they will not increase the hours of working nor accept a reduction in pay, and on the other some of the colliery proprietors point to the conclusions of the Commission as proof that they cannot continue on the present basis without a subsidy except at a loss. If the miners could show how a better price could be obtained for the coal in the face of foreign competition, a solution would be easy, but if they have any views on this point, they have not yet revealed them, and unless an economic solution is found, any temporary arrangement will merely postpone the evil day.

Distillation of Coal.

Sir Alfred Mond is a statesman who has the inestimable advantage of a knowledge of science and wide experience of business. At the Institute of Structural Engineers this week he made a very timely contribution to the coal problem, when he said that its solution did not lie with legislation but invention. He predicted that the chemist and the engineer would together solve the problem of coal distillation, and would be the real saviours of the mining industry. Unfortunately previous efforts in this direction seem to have created an atmosphere of mistrust in which it is very difficult to secure for new developments the attention that their importance deserves.

India's Railways and Home Business.

Writing in *The Times Trade and Engineering Supplement*, Mr. T. H. Thorne, Editor of the *Indian Railway Gazette*, says of things that ought to be made known in India.

"I do not think" he says, "that it is generally understood at home that Indianization is

rapidly going on, and that applies equally to purchases in this country. At present, even with a reasonably higher price, Indian goods will be taken in preference to others. But, and this is the point I want to stress, a preference is given to a firm which has goods available ex-godown over a firm which cannot quote such speedy delivery. Even if a firm has in its godowns only a limited amount of stock this is sufficient to give it a preference over others, and this notwithstanding that prices may be higher and usually are. English houses out here naturally do not look upon this with disfavour. But English houses out here cannot hope to be able to carry stocks of all the agencies they hold, and so much business is often lost to us. The position is that most of the big houses are gorged with agencies and very few of them can work them all satisfactorily. The smaller firms are mostly "suspect" by home manufacturers, with the result that many firms at home either go unrepresented or form one of the many agencies held by the bigger houses who cannot afford to keep a special man for each agency. The results cannot be satisfactory in all cases.

It, therefore, seems to me that firms at home having business out here should form *small* groups of three or four non-competing but allied lines and register the new company thus formed out here. I know that in the past this has been tried in one case but has not been very successful, and this was due entirely to having too many agencies for a couple of men to handle. India is a land of vast distances, slow business, and a fatiguing climate, and if men are to do their best they must not be overladen The time at present is particularly propitious in view of the enormous railway developments now progressing and to be continued for many years. I make my suggestion with the hope that it may focus the attention of some of the younger school on the vast business opportunities which the railways out here offer."

French Artificial Silk Output.

The production of artificial silk in France shows substantial progress. Of this there are two clear proofs. One is that imports of artificial silk yarns last year were only half those in 1924, while exports quadrupled. The second is that exports of artificial silk piece-goods increased 59 per cent on the previous year, during which they had already shown an advance of 185 per cent. The French manufacturers remain very reticent regarding their operations, but the Customs statistics indicate that the estimate of 6,000 tons as the production in 1924 has been largely exceeded. According to Mr. Fougere, President of the Silk Federation, the consumption of artificial silk by French industries rose from 3,500 tons in 1923 to 6,300 tons in 1924 and 7,000 tons last year; 50 per cent of the total quantity goes to the piece-goods manufacturers, 30 per cent to the hosiery industry, and 20 per cent in the making of ribbons, etc. Of yarns the output last year is said to have amounted to 6,500 tons, or 20 per cent more than in the preceding year, and it will not be surprising if these figures are doubled two or three years hence, in view of the establishment of new mills, several of which have been financed from abroad, notably the Courtauld Mill at Calais. The existing concerns are booked ahead for at least six months, for they have been benefiting both by a demand from home users and by the help of the depreciated franc in competing on foreign markets. Italy, Belgium, and Holland have all been affected by the progress of French manufacture. At the same time other countries—primarily Great Britain—have been purchasing increasing quantities of the French product. Great Britain has remained the best customer of France for tissues and yarns, Belgium coming second, but a long way behind. French exports to the United States more than doubled during the past year.

East African Loan Mystery.

When it was announced last autumn that the British Government had decided to adopt the recommendation of the East African Commission that a development loan of £10,000,000 should be guaranteed as to principal and interest by the Imperial Government, it was generally assumed that this involved acceptance of the Commission's suggestion that "during the construction period, which we may put as being the first five years, the interest would be payable by the Imperial Exchequer," repayment of any such advances to be begun by the East African transport systems and territories after ten years from the date of issue of the loan. It would seem, however, from statements that have been published in East Africa following the Governors' Conference held at Nairobi in February, that this is not the case. Sir Charles Bowring, Governor of Nyasaland, on his return to Blantyre, is reported as having said that the Conference learned that there would be no period free of interest and sinking fund on the £10,000,000 loan and that its utility to certain territories was, therefore, seriously reduced.

Iron and Steel Output.

The production of pig-iron in the United Kingdom in March amounted to 568,500 tons, compared with 502,000 tons in February and 607,900 tons in March, 1925. There were 151 furnaces in blast at the end of the month, an increase of five since the beginning of the month. The production of steel ingots and castings amounted to 784,100 tons, compared with 703,800 tons in February and 684,700 tons in March, 1925. The production of pig-iron included 179,000 tons of hematite, 203,000 tons of basic, 141,200 tons of foundry, and 20,000 tons of forge.

Gold Production in Canada.

Canada's production of gold last year totalled 1,740,386 fine ounces with a value of £7,195,000, compared with 1,525,382 ounces, worth £6,306,000 in 1924. The greatest provincial contributor to this total was Ontario, which accounted for nearly £6,400,000 worth, or 83.9 per cent of the total. British Columbia's production sold for £925,000, or 12.8 per cent of the total. At present Canada ranks third among the nations of the world in production. The Transvaal is first and the United States second.

Success in Business.

Certain natural characteristics are necessary to that one who is to make a success in retail distribution. He must like detail, because the business is a mass of details. He must have certain trading instincts, because buying and selling imply this, writes Mr. Gordon Selfridge in the *Daily Express*. He must have strength of purpose, and snap his fingers at discouragements, because, of course they come, and unless he can laugh at these little obstacles as they appear he is not well equipped for his job.

He must have ambition and never find himself too easily satisfied. He must have imagination, or if we cannot expect too much of that in the youth, he should at least have the kernel of it, from which could grow greater imagination as his mind grew more mature. He should have good manners, because courtesy and the sincere smile of goodwill are growing more and more important as the comparatively new science of large distribution develops.

If, on the other hand, the young man dislikes detail and gets tired easily, or lacks continuity and cannot keep himself up to the point; if he has not a fair amount of patience and ambition, and is inclined to let things stand as they are; if he has no head for trading, no head for figures, no inclination to become wise in the study of human nature, and does not appreciate courtesy and good manners, if he does not know how to treat his fellowmen, and finds himself quarrelsome rather than friendly—let him keep away from retail distribution, because he will find competition from within strong and too difficult for him to meet, handicapped as he is.

The British Sugar Beet Society.

In the Report of the Committee of the British Sugar Beet Society, Ltd., presented last month at their eleventh annual meeting, mention was made of the De Vecchis process. From what is there said, it seems that a Commission appointed by the Ministry of Agriculture was sent to Italy to inquire into the process, and their report was published in February, 1925. Furthermore, the Government has arranged with the Institute of Agricultural Engineering of Oxford University, to conduct further experiments with the process and to issue a report on such results as they obtain. Meanwhile, it seems as if the Commission has recommended that a complete plant of a small capacity, but on a factory basis, be set up in England to test the process which, the Sugar Beet Society itself still considers to be in the experimental stage, and that its commercial possibilities are still unproven. The Society even goes to the length to state that the known results are not such as should discourage the investment of further capital in the methods of sugar manufacture now in use.

It is interesting to note that the Society's cup to be won by the best beet output of not less than five acres went to a grower with an output of 17.95 tons of beet to the acre, and an average sugar content of 17.9 per cent. This is exceptionally large, seven tons of beet to the acre here and ten tons in good areas on the Continent being considered fair average returns. The winner of this cup, Mr. Philip Last, of Eye, Suffolk, who, like the writer, was present at the luncheon (as was the cup), astonished the meeting by saying "I have heard of London, but this is the first time of my coming." Even then the visit was a short one, from 11.30 to 5.18, during which period Mr. Last could have moved about very little, as he was at the meeting and luncheon probably from 11.45 or 11.50 to 3.15 or so. Perhaps, however, he may come up next year again; but hitherto, although around forty-five years of age, he has had no reason to come to town, he added.

Platitudes are truths which no one denies but everyone forgets.—*Dr. A. Shadwell.*

Canadian Trade and Finance.

Foreign Trade of Canada.

Montreal, May 6, 1926.- Statistics showing that the value of our Foreign Trade for the fiscal year ending March 31, 1926. had a value of two and one-quarter billion dollars, and balance sheets showing that the earnings of the Canadian Railways have been more satisfactory, constitute tangible evidence of the substantial improvement which has been taking place in business conditions. The readiness with which this year's quota of settlers under the Empire Settlement Act has been filled, even before the opening of navigation, indicates the fact that a new feeling of confidence is not only permeating the country but spreading outside our borders and creating new interests and enthusiasm for Canada.

We have already called attention to the fact that January building awards were the largest on record since 1913 with the exception of January 1920, when the price level was abnormally high. With the publication of the March figures it became evident that this volume of construction was being maintained, and that the volume for the first quarter of 1926 is the largest since 1913 with the exception of 1920. In March the volume of building, as reflected by construction contracts awarded, amounted to $19,779,300, an increase of 48% over last year. This increase is accounted for chiefly by an 180% rise in the value of business construction. Then the fact is considered that the index number of the cost of building materials is now the lowest at any time since 1920, when this index was started, and that the number of building permits issued is large, it would seem probable that this extensive building programme will be maintained for some months to come.

The principal manufacturing establishments in Ontario and Quebec, the industrial centre of Canada, are now operating near or at capacity and order on the books would indicate full capacity until midsummer. Pig iron production for the three months ending March was 159,641 tons or 31% in excess of that for the same period in 1925, while steel produced amounted to 180,458 tons or 5.5% over last year. Newsprint production for the quarter amounted to 429,444 tons as against 363,866 tons last year, comparing favourably with the United States output of 415,558 tons during the same period.

Improved business conditions are reflected in the record of commercial failures. For the first quarter of the year 593 failures were recorded, with liabilities of $7,566,336 as against 669 failures and liabilities of $10,683,676 during the same period in 1926. A marked improvement took place throughout the country with the exception of Nova Scotia and Prince Edward Island, where both the number of failures and liabilities involved were somewhat higher. Car loadings continue to increase, the total to April 10th amounting to 766,669 cars, an increase of 40,280 over 1925, of which merchandise L.C.L. and miscellaneous freight have accounted for 22,502 cars. This is indicative of a better in the wholesale and retail trade. Notwithstanding the embargo, except by permit, on grain for the Head of the Lakes and Vancouver, car loadings of grain were greater than in the spring of 1924 after the largest Canadian crop.

Canada's foreign trade for the fiscal year ending March 31st amounted to two and a quarter billion dollars, and although not the largest on record, the balance of exports over imports, amounting to $402,595,000, is the highest yet established.

Power Production.

The Royal Bank of Canada's figures on daily electrical power production for Canadian use show an average daily production of 26,573,151 kilo watt hours for December 1925; 26,675,765 k.w.h. for January 1926 and 27,879,831 k.w.h. for February 1926. These figures are based on the aggregate totals from companies controlling 90% of the installed turbine capacity in Canada. Power production for the first two months of 1926 exceeded the production for the same months in 1925 by 17½%, and preliminary figures indicate that the excess for the first quarter of the year will amount to 12% over the first quarter of last year. This increase is even larger than the corresponding increase which has been taking place in recent years. For instance, in January 1923 the production amounted to 19,079,278 k.w.h.; in January 1924 it amounted to 21,120,263 k.w.h.; in January 1925 to 23,197,791 k.w.h. as compared with the figures given above for January 1926. The increase of 1926 over 1925 is much more marked than the increase of 1925 over 1924.

KILO WATT HOURS.

Generated at Central Stations throughout Canada for Canadian use.

Daily average 90% of Industry.

(000 omitted)

MONTH	1923	1924
January	19,079	21,120
February	19,492	21,384
March	19,305	20,747
April	18,860	21,079
May	19,557	20,824
June	19,049	19,779
July	18,452	19,475
August	19,356	19,868
September	19,956	20,958
October	20,785	21,209
November	21,273	22,606
December	20,461	23,479

MONTH	1925	1926
January	23,198	26,676
February	23,160	27,880
March	22,452	
April	22,482	
May	22,297	
June	21,470	
July	21,470	
August	21,485	
September	23,992	
October	24,400	
November	25,625	
December	26,573	

The above figures show the rapidity of this increase in production. In past years, peak production was reached in the last months of the year and this was followed by rather marked recession. The figures for the early months of this year show less proportionate recession than in the previous years for which figures have been collected. This may indicate something of the greater activity in business conditions that was characteristic of the beginning of this year.

Somewhat the same situation prevails in the power industry in Ontario and Quebec. There was a twelve per cent increase for the first two months of the year. The average daily production in this territory for January amounted to 20,994,000 k.w.h. as compared with 19,179,000 k.w.h. for last year. For February the daily production was 22,155,000 k.w.h. as compared with 19,257,000 k.w.h. for last year. For the first quarter there is approximately a 13% increase. The following table shows the monthly production in Ontario and Quebec for Canadian use since January 1923 :—

MONTH	1923	1924
January	15,568	17,538
February	16,033	17,768
March	15,844	17,349
April	15,640	17,550
May	16,321	17,346
June	15,901	16,318
July	15,316	16,028
August	16,022	16,423
September	16,129	17,350
October	17,138	17,934
November	17,519	18,599
December	16,795	19,275

MONTH.	1925	1926
January	19,179	20,994
February	19,257	22,155
March	18,677	
April	18,595	
May	18,504	
June	17,831	
July	17,680	
August	17,192	
September	18,469	
October	19,376	
November	20,364	
December	20,883	

Canada's turbine installation was increased by nearly three quarters of a million horsepower during 1925. According to the figures of the Dominion Water Power and Reclamation Service, this represents an increase of 20% in total installation in the year and brings the total to 4,290,428 h.p. or 465 h.p. per 1000 of population. There is sufficient construction now underway to indicate that this year will see further increase proportionate to that in recent years. New projects are being planned and plant installations with a capacity of nearly 800,000 h.p. each, are under consideration for the Saguenay in Quebec and for the Bridge river in British Columbia. Canadian water power is being developed at a remarkable rate and this would seem to indicate a proportionate development in power-using industries.

POLICY IN POWER PRODUCTION.

The constructive attitude of the present Quebec Government, in its whole policy in the supervision of power development, is one that is calculated to be of substantial assistance to Canadian industry. Wide powers over schedules and over the construction of transmission lines have been granted to a board, the duties of which will be to see that the public shall be protected in the process of rate making and that the capital invested in the industry shall be protected in such a manner as to foster industry and to lead to further investment in Canadian projects. An example of the careful thought which has been given to this subject is contained in the wording of the preamble to the law prohibiting further export of power from the Province of Quebec ;

"An Act respecting the exportation of hydro-electric power.

Whereas this Province contains numerous waterfalls suitable for the development of electric power;

Whereas, by industrial development and the increase in domestic needs, the application of electric power is becoming more considerable every day;

Whereas, coal, oil, wood and other fuel are daily becoming more difficult to obtain and more expensive;

Whereas the industrial, commercial and economical development of the Province indicate that in the near future all the water powers which are the most accessible and the least costly to operate will be utilized;

Whereas once exportation of electric power is permitted, it can seldom be stopped or suspended without giving rise to serious difficulties;

Whereas it is in the best economical interests of the Province, for the promotion of its industry and commerce, to attract capital and create industrial centres therein in which workmen would find employment, thereby stopping emigration, and in which farmers would find markets for their produce:

Whereas the prohibition to export electric power in the cases hereinafter determined will constitute an important factor to assist in attaining these objects, and it is therefore expedient to enact provisions to that effect."

Insurance and Health.

For some years statisticians have been telling us that the average length of the human life was doubled during the nineteenth century. It is difficult to realize that only a century ago the average life was less than thirty years. Now comes the further news that the average span of life in the United States and Canada has been lengthened by five years since 1900. So quietly and effectively have the forces of prevention been carrying on their successful warfare against disease and death, that it is only after statistical analysis that we appreciate the scope of their campaign, and the extent of their victory. It may be well to explain that a large proportion of the more recent increases in the average length of human life are due to decreases in infant mortality.

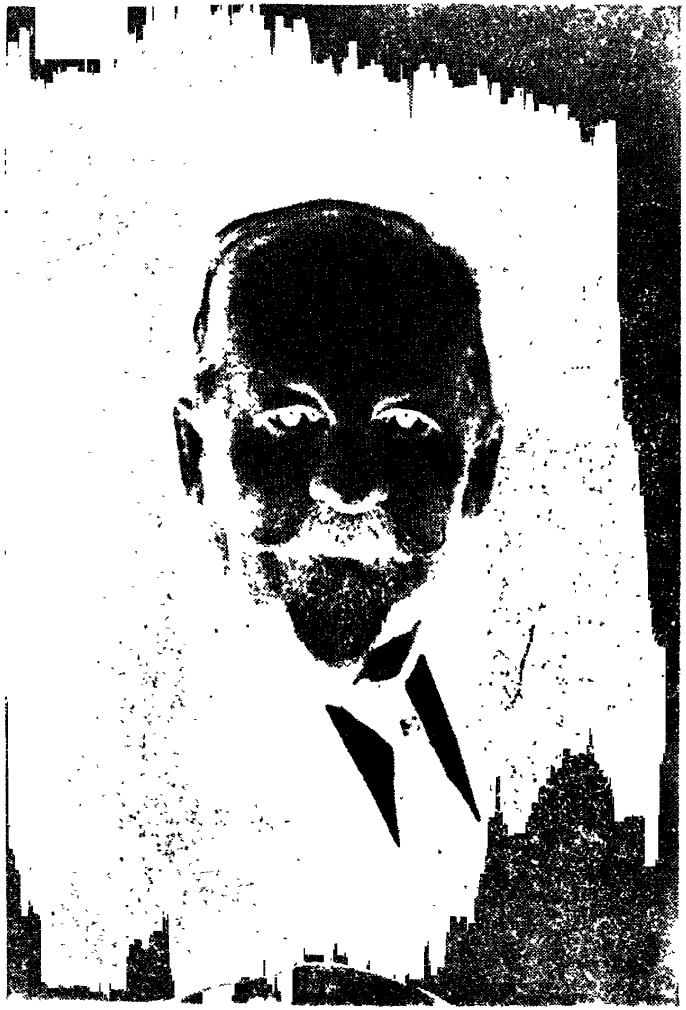
The spread of vaccination did away with small pox, sterilization made possible modern surgery, pure milk and water prevented typhoid, and fresh air has done much to conquer tuberculosis. Such have been man's most outstanding achievements in dealing with the invisible enemies first discovered by Pasteur. Recent achievements have been due to better organization; the effective work of the public health nurse, the establishment of clinics and the improved standards of the medical profession have all had their part in making the treatment of diseases more intelligent and scientific.

In the past the physician had to depend to a great extent upon his own experience. If a patient recovered under a particular treatment, he was apt to give credit for the recovery to the treatment and forgot the number who failed to recover under the same methods. Nothing in the physician's training gave him any inkling of the value of statistical methods in relation to his own work and it was not surprising that he was somewhat sceptical concerning the possibility of such methods throwing light upon the methods he should use in the treatment of the patient. His interest was in the particular patient rather than in the statistics of comparative methods.

Under such circumstances the attitude taken by the insurance company represented a new element in the situation. It was to their interest to decrease death rates and they were, therefore, interested in the health of the community as a whole rather than in the welfare of the particular individual. Such interest quickly centred attention upon communities and occupations where conditions were unsatisfactory. Community health became a real problem when it became a matter of financial moment to prolong life.

It was only a step further in the same direction to note the success or failure of particular methods of treating disease. Naturally those methods which secured most general success were brought into greater prominence owing to this same viewpoint; rigorous statistical comparison of the death rates under various treatments has done much to improve medical standards.

Perhaps the most satisfactory fact in the whole situation is that it is not treatment of disease but rather prevention of disease which has made the greatest progress in recent years. The problem of days lost to industry was brought to prominence with the introduction of employee health insurance plans. As soon as interest began to centre on the fact that there was a substantial annual economic loss due to absenteeism, the companies began to experiment with furnishing medical advice and nursing. In many cases, the results



Emile Coue, the Originator of Auto-Suggestion, whose death is announce



H. H. The Nawab of Kamadia who has remitted a lash of rupees due from farmers and cultivators owing to famine conditions.

The Amir of Afghanistan, who succeeded to the throne in 1919, is contemplating an early visit to Europe.

obtained were so encouraging that the company concluded that such work paid for itself. Only a step beyond this was necessary for whole communities to realize that the illness and deaths of individuals were an expensive waste of life to the community. All of these types of work have had cumulative results upon North American death rates, and recent statistics indicate that the American expectation of life is being steadily increased.

At the present time there is an average of $450 per capita of Life Insurance in force in Canada, as compared with $200 per capita in the United Kingdom or with $600 per capita in the United States. For Canada these figures mean that on the average, Insurance companies have an insurable risk amounting to $2,250 for every family in the country. It is quite usual for most people to regard Insurance as a mathematical process of risk-bearing so remotely connected with their own individual lives that they have no feeling that there may be active interest on the part of the Insurance companies in the improved health of the community. The amount of the individual policies seem so small in comparison with the immense totals paid to the companies in premiums or with the large amounts paid out by the companies each year.

From the viewpoint of the Insurance company, epidemics and insanitary conditions are a matter of financial moment. The life of each individual is said to be worth $10,000 to the country as a whole. This effort to place a capital value on each individual life becomes particularly important in a country like Canada, where increased population constitutes so important a need. Costs of this type must be contrasted with the cost of pure water or better sanitation if we are to realize the extent to which human life is wasted by lack of proper sanitation.

The development of property Insurance did much to attract attention to fire-proof buildings and to the elimination of fire hazards and it is becoming quite evident that the increasing per capita risk carried by the Insurance companies is creating organized efforts and leadership which are doing much to improve community sanitation. It is hard to estimate how much of the credit for this success is due to the effective means used by the Insurance companies in fostering community health movements and how much of it is due to their new statistical attitude towards disease, but in any case the contribution of Insurance and the Insurance view-point to health in North America has been one of the most powerful factors in the recent rapid decrease in mortality rates.

Sesqui-Centennial International Exposition.

Youth Awards.

Philadelphia, April 12, 1926.—President Coolidge will present gold medals to the winners of the American Youth Award and the American Teacher Award, being conducted by the Sesqui-Centennial International Exposition to be held in Philadelphia from June 1 to December 1. Thus the boy and girl and teacher from each state who are chosen as representing the highest ideals of American youth and teacherhood will receive from the hands of the President, mementos which they will carry among their prized possessions during their lives. The presentations will be made at the White House.

An 1832 Locomotive.

"Old Ironsides," the famous five-ton piece of railroad apparatus, designed in 1832 by Mathias Baldwin, founder of the Baldwin Locomotive Works, will be one of the prominent exhibits in the Palace of Machinery, Transportation, Mines and Metallurgy at the Exposition. The tiny model will be exhibited in contrast to the giant 330-ton flyers now being turned out by the Baldwin company.

Automobiles at the Sesqui.

Twenty-two automobile concerns are combining to prepare an exhibit for the Exposition. The display will occupy 120,000 square feet in the Palace of Transportation. National and local automobile associations are co-operating with the Exposition authorities in arranging for a showing which, it is declared, will be without parallel in the history of automobile shows.

Model Coal Mines.

The United States Bureau of Mines will exhibit model coal mines and the latest safety devices in connection with the Government exhibits.

130,000 Sq. Ft. for Government Exhibits.

The largest Government exhibit at any world's fair, with the exception of that assembled for the St. Louis Exposition, will be displayed at the Sesqui-Centennial International Exposition to be held in Philadelphia from June 1 to December 1, according to Rear Admiral Herman Osman Stickney, U. S. N., retired, Federal Commissioner to the Exposition, who is now in Philadelphia making arrangements for the Government's part in the Sesqui-Centennial.

The exhibits contemplated by the various Federal departments will cover an area of more than 130,000 square feet in the Palace of Machinery, Mines, Metallurgy and Transportation, inclusive of aisle space. Within this building will be arranged a model coal mine occupying a large space in the basement and the first floor as the contribution of the Bureau of Mines and the exhibits of the Department of Lighthouses, Bureau of Fisheries, Coast and Geodetic Survey, Federal Bureau for the Welfare of Women and Children, together with the units of the Department of Commerce.

The Treasury Department will operate a mint where Sesqui-Centennial medals will be struck off instead of coins, and an engraving department in connection with it will print engraved mementos of the Exposition and copies of the Declaration of Independence.

Federal exhibits not included in the Palace of Machinery will be a model Post Office conducted under Government supervision which will handle all mail distribution on the Exposition site. A building for the Coast Guard will be erected within the limits of the Navy Yard. The naval exhibit will be housed within two buildings, one to be constructed out of the $250,000 allotted to the Navy Department, and the other a building now standing, which will be remodelled for the purpose.

The War Department has completed arrangements for the encampment of 1000 troops on the Exposition grounds from May 20 until December 1. The troops will be under command of Colonel J. W. Beacham and will live under tents, which will be framed, floored and heated. The unit will comprise the headquarters, headquarters company, band and service company of the Twelfth Infantry; Third Battalion of the Twelfth Infantry; one battalion of the Sixth Field Artillery; one troop of the Third Cavalry; one platoon of light tanks and one platoon of heavy tanks; one composite air squadron; a detachment of quartermaster and ordnance troops. The Army Band, 90 men, of the Washington Barracks, will be in the camp for one month. The troops will give military displays, drills, exercises and will act as escort to distinguished visitors. They will appear in the new army uniforms.

Youth and Teacher Award.

Although plans for the American Youth Award and the American Teacher Award of the Sesqui-Centennial International Exposition have been publicly announced less than two weeks, sixteen governors and the president of the Board of Commissioners of the District of Columbia already have accepted invitations to serve as honorary chairmen of state committees. Acceptances from other governors are expected momentarily.

These Awards have been established by the Directors of the Sesqui-Centennial Exposition as a tribute of honor to the youth and teachers of America. A boy and a girl from each state will be chosen by their fellows as representing the highest ideals of American youth, and will attend the Exposition in Philadelphia as guests of the directors during the celebration of the one hundred and fiftieth anniversary of American Independence. In each state will also be chosen the teacher who has accomplished the greatest good for her pupils.

The states in which the governors already have agreed to serve as honorary chairmen of the state committees for the administration of the Award are California, Colorado, Georgia, Iowa, Kentucky, Minnesota, Montana, Nevada, New Jersey, New Mexico, New York, Pennsylvania, South Dakota, Utah, Virginia and Wyoming.

A National Honorary Committee has been formed and is composed of government officials, leaders of industry, noted educators, nationally known clergymen, and many others from various walks of life. The membership of this committee already includes the Vice-President of the United States and many United States senators.

Any boy or girl between the ages of thirteen and nineteen, whether in or out of school, is eligible to become a candidate for the American Youth Award, and any woman school teacher is eligible to become a candidate for the American Teacher Award.

Official entry forms and Award booklets may be obtained by addressing the American Youth Award or the American Teacher Award, Sesqui-Centennial International Exposition, Philadelphia.

Finest Style Display in Palace of Fashion.

Style, quality and distinction will characterize the exhibits which are going to fascinate women visitors in the Palace of Fashion at the Exposition in Philadelphia, June 1 to December 1.

Outlay of $250,000 to make the display the finest of its kind ever presented has been undertaken by a number of manufacturers and others interested in the production of textiles, wearing apparel and kindred lines incorporated as the Palace of Fashion Association of the Sesqui.

The Palace of Fashion will contain 600,000 square feet of floor space and will cost $1,500,000. The building will be of octagonal form, surmounted by a large central dome, with eight smaller domes set around the periphery.

At the centre will be a stage 90 feet in diameter, around which will extend an amphitheatre seating 6,000 persons. Continuous style shows and historical costume pageants will be the attractions that will keep the seats filled at all hours.

Beyond the amphitheatre, exhibition space of 500,000 square feet area will be filled with colorful and fascinating displays of textiles, wearing apparel, furs, millinery, gloves, hosiery, shoes, jewelry, fans and other accessories of good dressing, not excepting the beauty aids in general demand at the present day.

Displays will be so arranged as to be of material assistance in the selection of suitable styles for wear by various types of persons, thus enhancing their individuality.

Japan's Imperial Household at Sesqui

Art treasures of the Japanese Imperial Household will be part of the national exhibit of Japan at the Exposition according to Iwao Nishi, Commissioner-General of the Sesqui-Centennial Commission of Japan, who arrived in Philadelphia last week.

The Japanese Diet appropriated $600,000 for participation in the Sesqui-Centennial, while various industries of the Far East subscribed an additional $400,000.

Besides Mr. Nishi the Japanese Commissioners now in Philadelphia are S. Wada, Jiro Hitomi and Kisaburo Kohnosu.

Dentists of World Meet

The Seventh International Dental Congress which will be held in Philadelphia coincident with the Exposition, will be momentous for the fact that it will practically be the first international conclave since the World War delegates from all the countries that were at war will be present. Fifteen to twenty thousand dentists from all over the world will attend the Congress, which will be in session from August 23 to 28, inclusive. President Coolidge has been invited to officially open the Congress.

Sesqui-Centennial Stamp.

A special issue of United States postage stamps commemorating the Sesqui-Centennial of the Declaration of Independence, will be prepared in honor of the Exposition according to a letter received at headquarters from Rear Admiral Herman O. Stickney, National Exhibition Commissioner. The Government has assured Exposition authorities that there is enough time in which to prepare for such an issue and that an appropriate design of historic significance will be used.

France Participates Officially.

The Central Committee on Expositions of the French Government has announced that France will officially participate in the Exposition. A French artistic section, which will cover an area of 10,000 square feet, will display perfumes, gowns, millinery and lingerie.

Some interesting figures were quoted by Mr. J. H. Walesby in a recent lecture before the City of London Trades-men's Club. In the year 1913 British exports amounted in value to £525,253,595, while for 1925 the total was £773,086,410, giving an excess of imports over exports without allowing for re-exports of approximately 25 per cent in 1913 and 52½ per cent in 1925. In 1913 coal exports amounted to £50,727,252 or 10 per cent of the exports, while for 1925 the total was £50,477,211 or 7 per cent of the exports, these figures excluding bunkers for foreign ships which he estimates totalled about £11,000,000 in 1923 and about £22,000,000 in 1925. On the other hand, oil imports, including lamp oils, rose from £8,382,863 in 1913 to £34,527,607 in 1925. As Mr. Walesby justly remarks, coal is the root of most of the trouble in Britain to-day, and undoubtedly the high price of coal adds very considerably to the cost of living for the simple reason that the majority of transport is still carried on by coal and the cost of coal enters very largely into the price of food. In this connection, he cited Indian wheat as an instance. A ton of wheat from India is sold at about £14 13s. per ton load, and of this at least 10s. of the price represents coal, whereas in 1913 this latter stood at about four shillings.

Indian Economic Notes.

Training in Forestry.

A resolution of the Education Department of the Government of India sets the final seal on a long drawn-out controversy which has eventually been closed by the decision in favour of making India self-contained in the matter of education in forestry, by raising the standard of education at Dehra Dun. The resolution states that the Governor-General in Council, with the approval of the Secretary of State, has decided to inaugurate from November 1, 1926, at the Forest Research Institute and College, Dehra Dun, a course of instruction in forestry, up to the standard required for the Indian Forest Service. The course of instruction, which will begin on November 1 each year, will extend over a period of two years, and students qualifying at the end of that term will be awarded a diploma. Training will be supervised by the President of the Forest Research Institute, assisted by a Professor of Forestry and a number of instructors in forestry and subjects auxiliary to it. It will follow on the lines which have proved satisfactory at Coopers Hill and the Universities of Oxford, Cambridge and Edinburgh, where probationers for the Indian Forest Service have been trained hitherto. Arrangements will be made to ensure that the training which it is proposed to impart at Dehra Dun will be in no way inferior to that now obtainable at the Forestry School in Great Britain. For a career in Indian Forest Service and for admission to the new advanced course at Dehra Dun, a good general education and a substantial knowledge of one or more branches of natural science, with proficiency in Mathematics and English, are essential. The Government of India desire that this point should be emphasized for the information of intending candidates. The course will be open to students of the following categories: (1) Probationers of Indian Forest Service, who will be selected in accordance with regulations which will shortly be published; (2) Students from Indian States and private students desirous of obtaining the forestry diploma, who have reached a qualifying standard, which will be prescribed by the Forest College authorities; (3) The Indian Forest Service or Provincial Forest Service Officers deputed by local Governments to undergo the course of training; (4) Students deputed by Governments of Provinces in which forests are a transferred subject, preparatory to their appointment to services in those Provinces, constituted in substitution in Indian Forest Service; (5) Officers in class who are not deputed but are permitted to undergo the course at their own request while on leave; (6) Private students who have obtained a Provincial Forest Service course certificate; (7) Students deputed by Government of countries outside India. The fees for the two years' course will amount to Rs. 4,800 per student. This will cover the costs of tuition, also of lodging, light and water and other services at headquarters for the two years. All other expenses such as cost of messing, books, instruments, clothes, travelling expenses, etc., must be met either by the students themselves, or by the authorities, who send them for training at the Forest College.

Indian Capital.

The Committee of the Indian Merchants' Chamber and Bureau of Bombay have addressed a letter to the Government of Bombay, Finance Department, regarding the recommendation of the External Capital Committee on the useful employment of Indian capital. The Committee of the Indian Chamber recognize the supreme importance in the economic life of the country of the issues which are raised with a view to improvement of the banking organization and more intensive utilization of the money resources of India. They had read the remarks of the Finance Secretary in the Council of State and they would welcome the appointment of a committee with a non-official majority and the adequate representation of Indian interests to have a minute survey of the problems raised and when such a committee is appointed this Chamber would be glad to assist it in every possible way. The committee consider that the various issues raised in the Government letter can be more profitably dealt with by such a committee and they, therefore, do not wish to go into any such issues at present. They mention specifically one point, *viz.*, the very important place which the Imperial Bank of India occupies as the keystone of the entire banking system of the country. As a regulator of the money rates in the country and as Government bankers as well as with extensive privileges in remittance, etc., the Imperial Bank is likely to play a very important part in any reforms

which may come to be recommended by such a committee. Under these circumstances it is desirable that the constitution of the Imperial Bank, which is at present unsatisfactory, should be brought in greater consonance with public demand. As a profit-earning private enterprise the utility of this institution is likely to be impaired by the jealousy of the taxpayer at any additional privileges being handed over to that body. While the Imperial Bank of India Act at present gives a certain amount of control to the Government of India they are always able to plead that they have no voice in the internal administration of the bank. This position is unsatisfactory. The committee see no reason why the whole issue of the organization of the State Bank should not be revived and this purpose would probably be achieved by an outright nationalization of the Imperial Bank or by a greater control exercised by the State with some method of division of the surplus profits. The committee cannot approve of the displacement of the indigenous machinery for the handling of produce whatever criticism there may be against this machinery, if displacement will place farmers and traders alike at the mercy of the Imperial Bank without the necessary alteration in the constitution of the bank. The committee draw attention that the consideration of the proposal for a State Bank in India was an important item recommended for special examination by the Chamberlain Commission, of which Sir Basil Blackett, now Finance Member, was then Secretary. This issue has subsequently been shelved on account of the war and the aftermath thereof, but in view of more settled conditions and in view of the changes which the recommendations of the Currency Commission might involve, the full bearing of the present position of the Imperial Bank in the banking system of the country must be carefully examined. The committee ask Government to go very gingerly about the introduction of any reforms in the direction of uniformity in the bills of exchange at present in vogue as, if the purpose of these reforms are not understood, they might do more harm than good.

Cotton-Growing in India.

The *Financial Times* of April 10 writes: A bale of Punjab-American 285 F. cotton being shown this week at the Manchester Royal Exchange, and also in Liverpool, in many respects amplifies the optimistic opinions expressed by Mr. W. H. Himbury, General Manager of the British Cotton Growers' Association, on his recent return from a tour of our Empire cotton fields, regarding the possibilities of India as a contributory to Lancashire requirements. The bale shows considerable improvement in Indian cotton and was forwarded to Manchester by the Indian Central Cotton Committee which has done so much to promote the cultivation and marketing of cotton on sound lines in that country. Mr. Himbury stated on his return that India would produce more cotton of greatly improved quality, particularly when the Sukkur barrage scheme for the irrigation of land in the Sind province, north of Bombay, was completed, as this would at once render 1,00,000 acres available for the cultivation of best American. Information to hand indicates that many new varieties are being grown in India, and the cotton which will be on exhibition for the next week and which has been examined by many Lancashire spinners was forwarded to the Manchester Association to illustrate, practically, the advances already made. It is of this season's pick, and although not the best India can do, it is the best to hand this year. It is interesting as evidence of the development that Manchester so far this year has received 28,654 bales of Indian cotton, against 7,388 at a similar time last time. Further improved varieties labelled with the agricultural department's name on each particular variety are expected from the Indian Central Cotton Committee, the idea being that when these are shown Manchester merchants can make up from such bales types that would be available to the spinner, so that if an exporter said type 99 was equal to 285F. (the bale now on view) the spinner would at once be in a position to verify the submission.

Mysore Minerals.

The annual report of the Chief Inspector of Mines in the State of Mysore for the year 1924-25 states that there were 39 mining leases and 33 prospecting licenses current, as against 39 and 32, respectively, in the previous year, the aggregate area under the mining leases and prospecting licenses having increased from 12,275 acres to 47,051 acres. Some, however, were in respect of properties other than gold mines, such as manganese chrome, etc., the number of leases current for gold being 22, as in the previous year. Gold mining operations were in progress on five mining blocks, and were confined to the Kolar Gold Fields area. The nominal capital at December 31, 1924, of the five operating gold mining companies was £1,717,000, of which £1,667,737 was called and paid up, and the total quantity

of fine gold produced during the year was 392,578 oz., as compared with 381,059 oz. in 1923. The production of fine silver was 21,243 oz. against 19,024 oz. in the previous 12 months. Taking the gold and silver together, the total value was £1,836,067, showing an increase of £80,612, or 4.59 per cent., partly due to the larger quantity produced, and partly to a slight increase in its sterling value. Four of the five gold mining companies paid dividends during the year, the total amount distributed being £305,061, or an increase over the previous year of £20,420, and it is interesting to note that the total amount distributed was 21.67 per cent of the paid-up capital of the dividend paying companies, and 18.29 per cent of that of all the working companies. The corresponding figures for 1923 were 20.22 and 17.07 per cent respectively. In respect of royalty payable to the Mysore Government on the gold and silver won and the dividends paid, a sum of £95,663 was disbursed, representing an increase of £3,748, or 4.08 per cent over the 1923 amount.

Gold Output.

The government records show that from the commencement of mining operations down to the end of 1924 no less than 14,360,522 oz. of fine gold have been won from the mines, the total value recovered being £62,225,459. Of this huge total, £20,613,388 was paid in dividends and £3,273,139 went to the Government in the shape of royalties. The bulk of the remainder was money spent in India. Commenting upon the increase in the dividends paid in 1924 as compared with the preceding year, the inspector points out that this was almost entirely due to working costs having again been reduced. There was a decrease of 46,236 tons in the reserves of ore from the field as compared with the previous year, the estimates at the end of December, 1924, being 1,541,776 tons, as against 1,588,021 tons at the end of 1923. Champion Reef, however, increased its reserve of ore substantially during the year. There were 19,836 men engaged in gold mining, as against 20,601 in 1913, and of this number 339 were Europeans, 357 Anglo-Indians and 19,140 Indians. A total of 10,425 were employed underground and 9,411 on surface work. It is gratifying to note that the inspector is satisfied that "the relations between the employers and the employees on the Kolar Gold Fields continued to be satisfactory during the year under review." Steps were taken to prevent the chances of trivial accidents and to afford facilities such as ventilation, sanitation, control of fires underground, etc. The question of cooling the air of the deepest mines has received attention, and the report states, "the presence of an expert on the field for several months has advanced the knowledge as to method and cost." The ventilation of all the mines has been improved, except, perhaps, in the bottom levels of the south section of the Champion Reef mine, owing to the blocking of the down cast Glenshaft. This, however, will be remedied when the new secondary shaft is sunk from the 40th to the 65th level.

Catamarans in Madras.

The Madras Forest Department has been considering for some time whether it would be possible to supply catamarans from Government forests to fishermen in Madras. Over 600 catamarans are being used almost every day on the Madras coast between Adyar and Royapuram, while nearly as many lie on the shore to be employed when those that are on the sea have got too damp and must be left to dry. They are all of them made of *Melia Dubia*, or "Mala Vembu", as it is called in the vernacular, which is found in Ceylon, and the fishermen in Madras know of no other variety of wood suitable to their purpose. All the supply is thus derived from Ceylon direct or from ports like Porto Novo and Negapatam which deal with that island. Mostly the fishermen go themselves to any one of those places and bring the finished catamarans or the wood required for making them by rafting them along the coast halting at convenient spots on the way. When one comes to think of it, the fishermen show a good deal of quiet and unconscious heroism in the pursuit of their occupation. While fishing they often go to a distance of 15 miles or more on the waters. Generally they are out for 12 hours at a stretch, but sometimes when the sea gets stormy they are afloat for one or two days buffeting with the waves for long hours.

There are, commonly, two kinds of catamarans, of which the bigger measures from 18 to 23 feet in length, 6 to 8 feet in breadth and from 12 to 15 inches in depth, and the smaller sort is from 12 to 15 feet in length, about 4½ feet in breadth and from 9 to 12 inches in depth. But catamarans, which are still smaller are, however, not very rare. A new catamaran lasts from seven to ten years, after which its weather-worn logs are redressed and made into a smaller catamaran,

which may serve for another five years or so. A few catamarans may cost anything between Rs. 80 and Rs. 250 according to the size and quality of the timber used. Many of the fishermen have purchased their catamarans with money borrowed at an exorbitant rate of interest and are seldom able to free themselves from their indebtedness. In some cases they have, besides paying the interest on the loans taken, to give the creditors the fish they want at a nominal price.

Indigenous Timber.

"Mala Vembu", of which catamarans are made, weighs from 26 to 27 lbs. per cubic foot. On inquiries made by Mr. Mahomed Abdul Hafiz Saheb, who started the investigation as to the feasibility of making catamarans locally last year, when he was the Forest Research Officer, and by Mr. M. F. Bridge, who succeeded him in that post, it was found that there were more than a dozen species of woodlike, for instance, *Tetrameles nudiflora* and *Lophepetalum wightianum* in Government forests, which almost equal "Mala Vembu" in weight. There is at present scarcely any demand for some of these classes of wood, and it is desirable to seek a market for them. But it has to be ascertained whether after the felling and transport charges they can be sold in Madras at a price more favourable to the buyer than that of the imported timber. Most of these timbers are found in large quantities in Malabar, from where it may be cheaper to bring them on coasting steamers than by rail. Another important test which the indigenous timber must satisfy before it can be accepted as seaworthy is, of course, whether it can sufficiently resist moisture and conditions of the weather, and the results of the experiments of the Forest Department in this connection must be of interest to dealers in timber in this Province.

Prices of Foodgrains in India.

The average level of wholesale prices of cereals and pulses in India on or about 31st March, 1926, showed a fall of about 1 per cent as compared with a fortnight ago. Prices of wheat, barley and *gram* declined by 2 per cent each and *arhar da* by 1 per cent, while rice, *jowar* and *bajra* increased by 1 per cent. The price of maize remained unchanged. *Ghi* and raw sugar (*gur*) fell by 1 per cent each but salt remained stationary. As regards provincial prices, the noticeable fluctuation is a rise of 11 per cent in *jowar* in Delhi. The price of rice in Bengal rose by 1 per cent, while that of wheat in the Punjab fell by 7 per cent.

Indian Customs Review.

According to returns received in the Department of Commercial Intelligence and Statistics, the grand total of gross Indian Sea and Land Customs Revenue (excluding Salt Revenue) during the month of April 1926, amounted to Rs. 3,99 lakhs, as against Rs. 4,66 lakhs in the preceding month and Rs. 3,73 lakhs in April 1925. To the total revenue realized in the month of report, import duties contributed Rs. 3,38 lakhs; export duties Rs. 39 lakhs; excise duties on motor spirit Rs. 11 lakhs and on kerosene Rs. 9 lakhs; and Land customs and miscellaneous Rs. 2 lakhs. As compared with April 1925, increases were noticeable in import duties on sugar, metals (chiefly iron and steel), mineral oils, tobacco, cutlery and hardware, yarn and textile fabrics (other than cotton and silk), motor cars and cycles and cotton yarn; and in excise duties on motor spirit and kerosene. On the other hand, import duties on white and coloured cotton piece-goods, and liquors, and export duties on raw and manufactured jute showed important decreases. The protective special duties collected on private imports during the month of April 1926, amounted to over Rs. 37 lakhs. The duties on Government Stores amounted to Rs. 6 lakhs exclusive of the protective duties, as against nearly Rs. 13 lakhs in April 1925. The detailed statement will be found at pages 269-270.

Indian Students in London

The High Commissioner for India has set up a small committee to assist Indian students to find suitable accommodation during their stay in London with private English families willing to receive paying guests. The committee will also be prepared to give advice and information regarding suitable lodging, boarding houses, hostels, and holiday homes. The co-operation of families and others interested in the scheme is welcomed. Letters should be addressed to the Secretary, Indian Students' Accommodation Committee, at 21, Cromwell Road, South Kensington, London, S. W. 7. Indian students who desire to avail themselves of the facilities offered by the committee are invited to apply to the secretary to the committee at the same address.

Bombay Machinery.

Two large works have lately been established in the Bombay Presidency for manufacturing

machinery suitable for agricultural and small industries. These are the Satara Industrial Works at Satara and the Great Eastern Engineering Co., Ltd., at Bombay. The Satara Industrial Works manufacture agricultural implements such as iron ploughs of various kinds, sugarcane crushers, ropemaking machines, etc. They have largely extended and equipped their works with modern tools during the year, putting down a large gas engine to drive their workshops. The ploughs and other articles manufactured at these works are well spoken of and are in good demand. The Great Eastern Engineering Company have lately put down a large workshop and foundry at De Lisle Road, Bombay, occupying an area of about 60,000 square feet, and are well equipped with high speed machine tools for manufacturing gins, corn grinding mills, rotary oil mills, sugarcane mills, pumps, groundnut openers, saw benches, etc. The special features of some of the machines turned out by the abovenamed works as compared with those of the imported ones are that practical experience gained in this country on the spot under local labour and local circumstances has been brought to bear on the designs and constructional details of these machines. As, for instance, large accumulated experience is now available in this country regarding the difficulties and defects that often come across in working the imported cotton ginning machines which, if made in this country, could be greatly improved so as to eliminate them. Similarly rotary oil-ghanis, flour grinding mills, etc., must be designed to suit and answer the local demands and local circumstances which are often different in various districts.

Topics in the Journals.

British Textile Exports.

"In complying with the request of the editor of the *Export World* for an article on the present position of cotton exports, I shall take the opportunity of dealing with two aspects of the question in particular, that of our supposed loss of trade owing to the activity of some of our 'competitors', and the charge made by officials and others that Lancashire is holding up trade by artificially bolstering up yarn and cloth prices." So writes Sir Charles Macara.

With regard to the first-named matter, I want to say here, and at once, that despite all the talk of foreigners cutting into our trade, we have no competition to meet worthy of the name. This may appear to be a bold statement in view of the great outcry made recently as to the business being done by Italy and Japan, but what is forgotten is that production bears relation only to means of output, and what is a big percentage advance to a little country may be a small matter indeed when laid alongside the output of a country which has a great proportion of the machinery in the world at its disposal and is equipped for producing goods on an enormous scale.

When a great shout goes up about the export trade done by any country, it is as well to examine what its equipment is, for percentages of output are altogether misleading. With this factor ascertained, along with the class of trade the country is doing, we may come to some better idea of what it can do and is doing than anything we can gather from the fulminations of sensational journalists. It may, therefore, be of advantage to set forth the spindleage of the various countries engaged in cotton goods production, and then we can see for ourselves what the possibilities are,

The latest figures collected by the International Cotton Federation are as follows :—

	Spindles in 1925.
Great Britain	.. 57,116,000
France	.. 9,428,000
Germany	.. 9,500,000
Russia*	.. 7,246,000
Italy	.. 4,771,000
Czecho-Slovakia	.. 3,471,000
Spain	.. 1,813,000
Belgium	.. 1,788,000
Switzerland	.. 1,517,000
Poland	.. 1,172,000
Austria	.. 1,038,000
Other European Countries ..	.. 2,264,000
India	.. 8,500,000
Japan*	.. 5,292,000
China	.. 3,350,000
U. S. A.	.. 37,937,000
Canada	.. 1,319,000
Mexico	.. 814,000
Brazil	.. 1,950,000
Sundries	.. 1,077,000

Of the world's total of 161,363,000 spindles, England has about one-third, or nearly as many as all Asia and America put together. Italy, which is thought to be doing such great things, has, even on a double-shift system, not enough to supply clothing for her own needs, and if she sells one quality she must buy another; while Japan, with something over 5,000,000 spindles, cannot possibly make "inroads" into anybody's trade if she is to have any goods left

* Although Russia is credited with over 7,000,000 spindles, it is doubtful whther more than half of these are yet fit to run; while owing to earthquake disasters, Japan's workable spindles are over half a million less than the figure given above.

for herself. Japan has a population about equal to that of England, and England takes the produce of 12,000,000 spindles to supply her own needs.

Again, we have it on the authority of Dr. Mylius, the President of the Italian Cotton Association, that Italy would not have done so well had she not been eating into her capital in order to undercut her rivals. She has pursued the foolish policy of working over time without building up a fund to replace her machinery, which now costs double pre-war, so that under these circumstances her powers of competition are not likely to be lasting. Indeed, an official report from Italy states that "English competition in the Italian and foreign markets has begun to make itself felt, and has forced spinners, weavers and exporters to reduce their margins more keenly." On the whole, the situation is still good, says the report, but it is anticipated that a lack of orders will be experienced in the Spring.

And what does Japanese activity amount to? The Japan Cotton Spinners' Association tells us that in 1921 the mills belonging to the Association "reported three times the number of spindles and eight times the number of looms that they possessed in 1905, and during this period the annual consumption of raw cotton increased over 1,000,000 bales, the output of cotton yarns was doubled, and cloth production was augmented eightfold." All of which sounds quite imposing until it is pointed out that even on short-time working, England exported to India alone last year 300,000,000 yards of cloth more than Japan produced altogether working overtime. And our exports, it must be remembered, were of fine goods, while Japan's were coarse, making all the difference in the world in the value of the production.

It makes all the difference, also, in regard to the weight of cotton used. Many people are misled into thinking that England is losing ground owing to the fact that other countries appear to be increasing faster their consumption of cotton. This, however, is quite a superficial view. The finer you spin and the less weight of cotton you use, you put into the production more work, but less material. Japan is engaged in producing coarse, lightly-spun stuff which hardly comes into competition with the finer English goods and so neither does nor can do this country any serious harm.

It may be pointed out that India's imports of British cotton cloth increased from 1,306,266,000 yards in 1923-24 to 1,598,729,000 in 1924-25, which is a sufficient indication that Japanese gains have not been at Britain's expense. Japan's gains, aided largely by the depreciation in Japanese exchange during the past two years, have been chiefly at the expense of the native mills of India, as shown by the recent agitation for the removal of the Indian excise, which was said to be handicapping India in her competition with Japan.

English textile goods, indeed, maintain their supremacy everywhere, and they will come into their own again so far as quantity is concerned, as soon as countries like China settle down, and we get rid of some of the financial burdens imposed upon us by the war. We have such a lead in plant, in climate, in workmanship and everything else that it is a total impossibility for us to be overtaken by any other country engaged in cotton goods production.

No Artificial Hold-up of Prices.

I notice in the January number of the *Export World* that the remark of Mr. T. M. Ainscough, Senior Trade Commissioner in India, is quoted to the effect that "the artificial bolstering up of cloth prices in Lancashire by short time working has effectually prevented the purchase by India of its accumulated requirements." One cannot understand any person making such a statement as this when the trade is losing money at the rate it is to-day. The real complaint in Lancashire is not that prices are being bolstered up by a short-time policy, but that losses are being made owing to an over-eagerness to run more hours than the demand justifies. This over-eagerness has led to a virtual breakdown of the Spinners' Federation short-time policy, and in itself refutes the contention that the trade as a whole is deliberately reducing its hours and cares nothing about reducing prices. Lancashire has, on more than one occasion since the slump began, tried full-time running in the hope that a brisk demand would thereby be stimulated, but the result has been that she has squandered scores of millions of pounds of her capital by overproducing and having to sell huge surpluses at a loss.

We are told by Mr Ainscough that India was prepared to place orders for large quantities of goods when cotton was 13*d*. per lb. If so, why are orders held back now when cotton has fallen to 9¼*d*. a lb.? Especially is one inclined to ask the question in view of the fact that the fall in yarn and cloth prices during the past twelve months has been nearly double that in the raw material: showing again that spinners and manufacturers have not pursued a policy of taking advantage of their customers, but have made sacrifices constantly in order to attract business.

The action of buyers to-day would seem to bear out the statement made everywhere in Lancashire that it is not a question of being able to pay a fair price on their part, but that they will carry on their old cat-and-mouse game so long as spinners continue their foolish policy of overproducing and later on slaughtering their stocks. Many observers are convinced that much more trade would be done if spinners and manufacturers would, like those engaged in other sections of the trade, control their output and refuse to sell at unprofitable rates. It is a well-known fact that when spinners restricted their productions by going on to 26½ hours per week in 1924, they were not only better remunerated but they did more business. But no sooner did they extend their hours of working, than they went backwards again.

So far, cheap cotton has not brought out business on any large scale, and investors in Lancashire mills are crying out for the trade to adopt the same policy as did the rubber companies when those companies were being ruined by overproduction. I have for long held that the industry should be controlled on scientific lines if we are to get back our prosperity, and I see no hope of its return until we do administer our affairs, not in the interests of individuals, but in the interests of the whole spinning and manufacturing trade. We lack nothing but organization, and once we get that we shall again assume our former supreme and prosperous position in the cotton trade of the world.

Indian Rural Life.

Sir Reginald Craddock writes in *The Times* of April 9:—

In your issue of March 31 you published an interesting article on the Indian ryot. While one may agree with many of the sentiments which your correspondent expresses, I feel that his picture of the average "ryot" gives an impression of poverty and helplessness quite unwarranted by facts. The ryot's

life is not so "meagre and squalid". The picture of the single-roomed thatched mud hovel, often shared with cattle, garments only enough for decency, a meagre diet eaten off earthenware dishes, and no furniture but a string cot, is really a travesty of the condition of the average cultivator. Doubtless there are a few poverty-stricken individuals of this type to be found among field labourers and derelicts of village life. The ryots may not keep much in the way of chairs and tables--nor does the village money-lender—they both prefer the ground. But he has his own comforts and adornments, his brass and copper vessels, his silver (and sometimes gold) ornaments, his dress for gala occasions. He generally has some good plough cattle, a cart or two, and a milch buffalo. He spends too much money on weddings, ceremonies and litigation, which are indeed the chief cause of his indebtedness.

It is now more than 30 years since it fell to my lot as a settlement officer to classify the tenantry of every village of the district that I was resettling. They fell into four classes,—

(*a*) Those well-to-do, who lent money and grain;

(*b*) Substantial cultivators, comfortably off and quite free from debt;

(*c*) The average ryot, indebted, but within his credit, without any mortgage on his lands;

(*d*) Two categories:

i. Cultivators seriously involved in debt and with holdings mortgaged, and

ii. Very petty cultivators with little or no credit, corresponding with the description given by your correspondent.

In good villages the percentage of (*a*) class tenants varied from about 5 to 10 per cent of (*b*) from between 15 to 25 per cent of (*c*) from 60 to 75 per cent and of (*d*) 10 to 5 per cent. In poor villages (*a*) and (*b*) classes would be few, but (*d*) was seldom more than 15 to 20 per cent, of whom only a few fell within the second category of that class. That same district has been resettled since, and its condition and the prosperity of the cultivators has further progressed. Naturally the prosperity of villages varies a good deal with the quality of the soil, the crops produced, the caste of the cultivators, and the luck of the seasons. But during the last 50 or 60 years there has been a steady and solid increase of prosperity, a fact which the village elders will readily admit in friendly conversation when the day's work is done.

Everyone is delighted to have in Lord Irwin a Viceroy who is keen on agriculture, and everyone wishes success to the Royal Commission, but any idea that the Government and its Revenue Officers are just waking up to the helpless condition of the ryot is quite ludicrous. I have served myself under nine Viceroys, all of whom were benevolently disposed to the rural masses, but the only one who gave a really great push to agricultural prosperity was Lord Curzon. He did immense good by liberalizing the rules for collection, suspension and remission of land revenue in times of failure, by the reduction of the burden of cesses, superimposed on the land revenue, by the appointment of the Irrigation Commission, by the establishment of a Scientific Agricultural Department, and by the initiation of co-operative credit. Since Lord Curzon's day his successors have been too much pre-occupied with the political problems of the Intelligentsia to have much time to devote to acquiring knowledge of rural problems. But this does not mean that the interests of agriculturists have been neglected. There is probably no cultivator in the world whose well-being has had more anxious care bestowed upon it by the Government and its Revenue Officials than the Indian. Lord Irwin has already in his first speech recognized this, but there is still much to be done, and if the Royal Commission is able to devise, and the new Viceroy to put into operation, measures which will bring greater prosperity to a greater number of India's industrious and patient peasantry, all lovers of India will rejoice.

There is just one point to which your correspondent has very properly called attention. Amidst large irrigation schemes, irrigating acres by the hundred thousand, and estimated to give a good percentage return on the capital cost, there is a real risk that the great value of small protective works will be overlooked. There is rather a tendency to despise them, because they are scattered and troublesome to manage, and the direct return in water rates is small, while many of them, being dependent on rainfall, fail in the years of most serious drought. But in the majority of years they make the people more prosperous, so that in the year of severe drought the stocks and the credit of the ryots are sufficient to tide them over the bad period, and their recovery is rapid. There are many tracts in which large works are not feasible, and in these the small protective work is most valuable, but is often neglected in favour of the larger work in other areas which yield better financial prospects.

Swedish Co-operative Organization.

Experience has proved the advantages of co-operative organizations and the movement is spreading in almost all the European countries. The following article taken from the *Swedish Export Journal* and dealing with the Swedish co-operative organization is sure to prove of interest to our readers :—

The what-would-seem lavish inclinations of Swedes individually seem to be counteracted by a sort of collective caution in economy Witness the national finances into which innovations are rarely allowed to enter and where the spending spirit is kept at bay, the banks, the most prominent industrial and commercial concerns, which all of them conduct their affairs and especially the financial end of them, in a notably conservative and safe manner.

These reflections are called forth by the facts and figures given in an account of the consumers' co operative movement in Sweden. Thus we learn that in this country of what might be thought happy-go-lucky buyers there are some 300,000 families registered as members of the 876 local co-operative societies. In other words, the movement now affects, more or less intimately, a fifth of the population of Sweden.

The Swedish consumers' co-operation is organized on the Rochdale plan and is therefore politically neutral. The business methods of the society are in the main identical with those practised elsewhere, with this important difference that the Swedish societies sell to outsiders who are granted the same pecuniary benefits on such sales as the members. This plan has proved especially valuable to the society inasmuch as the dividends take the form of shares in the society and these customers are thus automatically made members. The temptation of making an extra profit by selling to non-members is also obviated by the policy pursued in this regard.

It is a fact that not until the co-operators in Sweden began to interest themselves actively in producing commodities on a large scale did the movement receive its due share of attention. The selling through retail

shops, which had been going on for so many years, and which undoubtedly is the soul of co-operation as we understand it to-day, is a rather unobtrusive activity except to those most immediately concerned, the ownership of large factories and flour mills, on the other hand, looms more vividly in the public eye.

The national organization formed by the different co-operative societies in Sweden is called the Co-operative Federation. The Federation was organized in 1899 but did not begin to interest itself actively in business until about the year 1904. At first the Federation acted as a buying agency for the local societies, but later the activity was extended in different directions according as the financial resources at its disposal accumulated. At present the Federation is the largest wholesale concern in Sweden and exercises a dominant influence in the sale of certain commodities. From a buying concern pure and simple the Federation began some years ago to grapple with the subject of industrial production.

In entering the sphere of manufacturing the idea animating the leaders was to produce in the first place such articles as would be of most benefit to the members, and the profitableness of certain kind of productive activity was made a secondary consideration.

Certain circumstances induced the Federation to first give its attention to the margarine industry. The price of margarine had for a number of years been fixed by an agreement between the manufacturers controlling the trade in Sweden. In view of the importance of margarine as an article of consumption for people of small means it was decided to start or purchase a factory producing this commodity. The co-operative margarine factory of the Federation is now the incomparably biggest in Sweden, and its influence on the market has served to press down the price of margarine very considerably, thus benefitting not only the members but also all other consumers.

Few if any commodities are of as great an importance in the average household as flour. The price of flour was also controlled by a number of large mills who supplied the major requirements of the Swedish market. By means of the two flour mills acquired by the Co-operative Federation from the former combine the Federation is in a position to influence the price policy very markedly and thereby check the power of the other big mills.

The Federation adheres strictly to its policy of not using outside capital for extending its activity to new spheres. The development is made dependent on the rate of accumulation of its own available funds. The margarine factory and flour mills are, therefore, the only big ventures of a productive nature, but the Federation also operates a shoe factory and a factory for certain household chemical preparations.

The members of the Co-operative Societies composing the Federation have at all times been willing to place their savings at the disposal of the Federation. A special savings department has been established to take care of these funds intended for members only. The money deposited here are not, however, used to any considerable extent for the development of the Federation's industrial activity. Depositors naturally want to withdraw their money whenever they require them, which makes it desirable to invest the funds in more readily realizable securities.

The Co-operative Federation's distribution of goods to the local societies takes place through district depots in different parts of the country. The purchasing department in Stockholm directs that such quantities and qualities of goods shall be sent to these depots as are warranted by the local demand according to previous experience. The persons in charge of the depots are salaried officials of the Federation who do not themselves purchase any goods. Their duties comprise selling the goods in stock, or ordered by them from the head office, at the prices fixed by the central office. This organization for conducting the purchasing and also the general selling from the headquarters, while the actual selling and distribution is left to persons and organs in close touch with their respective districts, is not only effective, but has also made it possible to keep the working expenses exceptionally low. It will be understood that the goods are only purchased from Stockholm, the shipments to the various depots take place in most instances direct from the producer's factory or stores by the most direct or convenient route.

The publicity and educational work carried out by the Co-operative Federation is an extremely important link in the co-operative movement. The co-operative journal has a larger edition than any weekly paper in Sweden. The Federation besides conducts a correspondence school which gives instruction in economic subjects. Cinematographic films depicting the activity of the co-operative enterprises are shown constantly at the different cinemas throughout the country. To this come lecture tours and other propaganda for co-operation.

At a school near Stockholm special courses are arranged for the different kinds of skilled workmen and other employees required by the co-operative societies.

The organization of the co-operative societies is very divergent depending on their size. The smaller societies having only some hundred members usually elect a committee of five persons. The committee in turn engages a manager for handling the current business. The big societies must resort to a more complicated system. Here the members are usually divided up in district branches, which elect representatives to an executive council. The council then appoints the salaried chiefs of departments, who transact the actual business of the society.

Much attention has been paid in Sweden to effect improvements in the financial methods. Every effort has been made to conform to the Rochdale rules of neither giving credit for goods sold nor accepting credit for goods purchased. The rule of only making cash sales is the one most easily enforced; it is far more difficult to induce the societies not to buy goods on credit from the suppliers. The campaign carried on to put down this practice has done good work, however, and the money owing for goods which corresponded to one month's turnover in 1910 are now equal to only 10—15 days' sales. Many societies have no liabilities of this description at all.

An agitation for reducing the stocks on hand to a more current description has also borne fruit. The average stocks of Swedish co-operative societies now correspond to about 30 days' turnover, which must be regarded as very good in view of the fact that many of the societies are located in the country and have to keep a very large variety of articles for sale.

The accumulation of funds by the societies takes place automatically according to the principle that a certain percentage of the profits must be set aside for this purpose. The funds, moreover, cannot according to the bye-laws be divided among the members. In case a society is dissolved its funds are applied to some public good or other object approved by the Federation. A guarantee is thus afforded against dissolution of a society when the funds have reached a large amount in relation to the membership, which guarantee is

further strengthened by the provision which forbids alteration of the bye-laws without the consent of the Federation. The assets of a society thus constitute common property intended to safeguard its continued existence.

This brief account of co-operation in Sweden, which is naturally of a most fragmentary description, may fitly be concluded with figures for last year's turnover, published in the Federation's organ.

During 1925 the sales of the Federation have amounted to 97,650,000 kronor, representing an increase of nearly 14,000,000 kronor over 1924. The principal staple commodities are represented by 24,000 tons of sugar sold. The Federation flour mills have delivered 90,000 tons of flour and the margarine factory 8,300 tons of margarine.

Spread of Co-operation Methods in Agriculture.

In his annual report the United States Secretary of Agriculture states, that the most distinct and significant movement in American agriculture in this decade, is the almost universal trend towards co-operation in the marketing and distribution of agricultural products. It is in no sense a regional or sectional movement, for it exists in all sections and is participated to some extent by producers of practically all kinds of farm products.

There has been some co-operation by farmers in the United States for many years, but within the last two decades, and chiefly during the last decade, the movement has assumed dimensions which indicate that it is a response to a fundamental and universal need of present-day American agriculture. It is highly significant from all points of view that the best minds in agriculture, without regard to region or commodity, are unanimous in the opinion, that collective action in marketing must be added to individual efficiency in production if the high standards of farm life are to be preserved and agriculture is to maintain in its proper place in the country's national life. Vast problems are involved in the changes in agriculture and in commerce and industry which this movement is bringing about. These changes are bound to affect vitally all classes in the country.

In America, the business transacted by co-operative buying and selling organizations will be, conservatively estimated, $2,500,000,000 during 1925—approximately one-fifth of the total agricultural business. During the past ten years co-operation has been evolving from the local type of organization into associations and federations covering large areas and handling business totalling millions of dollars annually. Although 95 per cent of the co-operative associations are still local organizations, approximately one-third of the total business at present is carried on by 100 of the federations and regional factors in co-operative marketing.

The tendency towards combinations in the American business world has had an influence on the creation of large co-operative marketing organizations. The average business of co-operative associations more than doubled between 1913 and 1922, increasing from $100,000 in round figures, to $216,000 per association. The business of tobacco marketing associations, from $191,112 to $3,405,765; dairy marketing associations from $50,296 to $116,683; and fruit and vegetable organizations from $153,336 to $284,081. These figures do not take into account the business done by the federations of which many fruit and vegetable and dairy organizations are members. The increase in the volume of business has resulted in the progress in methods of operation and merchandizing. It has brought about, on the whole, economies in operation, a greater insistence on standardized products, easier financing, and has encouraged capable executives to enter the service of co-operative associations.

Co-operative methods in agriculture are spreading not only in America, but also in Europe. Great improvements in this direction have recently taken place in some of the progressive countries, especially in Sweden and in Denmark. In our last number we have treated at length the developments that have taken place in Denmark, a country which occupies the front rank both as regards the methods of production and marketing. We hope that those of our readers, who are interested in the improvement of agriculture in India would bestow their serious attentions to these changes.

Labour Education Policy.

Under the title "From Nursery School to University", the Trades Union Congress and Labour Party (32, Eccleston-Square, S. W.), have published a report of their Education Advisory Committee containing "an authoritative declaration of policy on behalf of the Labour Movement". The main recommendations are as follows:—

Children under seven should be taught in open-air nursery schools, it being the duty of local authorities to provide such schools, where required by a sufficient number of parents, for children over two and under five. Primary education should be "the education of every child in the community" till about the age of 11, at which age all children should be transferred to separately organized schools providing some from secondary education. The school age should be raised to 15, and maintenance allowances should be provided for all children over 14 in need of them, at least 80 per cent of expenditure being borne by the Treasury. The number of places in secondary schools should be calculated at 20 per 1,000 of the general population, and school fees should be abolished in secondary schools. Authorities should be required to provide one University scholarship for every 50 school pupils. At Universities, all "scholarship" payments should be made according to need, and the cost of students' living reduced.

Authorities in towns of 50,000 population and over, not having the status of county boroughs, should be able to claim full educational authority, and where the population is below this figure, the area should be merged in the country. Children over 11 in rural districts should be educated at central schools serving a number of villages. All external examinations should be postponed till the end of the secondary course, and only a proportion of secondary pupils should be expected to take the First School Examination. Experiments should be made with "intelligence tests" and examinations should be adapted to the needs of the schools. The organization and financing of educational research is suggested as a subject calling for inquiry. The size of classes should be limited to 10, and reduced to 50, within a period of five years. There should be no new appointments of unqualified teachers during the educational period

should be discontinued, and the eventual aim should be a full course at a university for all intending teachers, to be followed by professional training. All school buildings and equipment should be made to conform to certain specified conditions within a definite period, without distinction between Council and voluntary schools. The staff of school nurses should be largely increased, and use should be made of part-time school doctors. Extension of dental treatment is asked for, and the abolition of parents' fees. The provision of special schools is urged for all mental and physically defective children. A midday meal, it is suggested, should be provided by all authorities as a part of the ordinary school curriculum, where the school doctor advises it or the parents claim it, the cost to be recovered from the parents except "where payment would deprive the family of other necessaries".

The Committee estimate that the carrying out of these proposals would involve an increase of about 50 per cent on present expenditure, making a total expenditure of £107,000,000 a year.

The Best Way to Keep Well.

Sir Bruce Bruce-Porter, K.B.E., C.M.G., M.D., is one of the founders of the New Health Society, Sentinel House, 46, Southampton Row, W.C.1, a society of eminent doctors and public men, formed with the object of improving the health, vigour, and happiness of the nation. Its motto is "Prevention". He notes in *Titbits*:—

We never know the value of things till we have thrown them away, and in nothing is this more true than in health.

If you value your happiness and efficiency, consider your health now and what it is likely to be ten years hence. If you think, then, it is worth while, study the joy of living.

There is nothing permanent in Nature, and it is said we begin to die the moment we are born. On the question of keeping well depends the slowness of the progress towards the end of life and what sort of enjoyment that life will give.

Short Lives and Gay.

There is no such thing as "a short life and a gay one'. That expression is poetic licence. The experiment has been tried so often that it is folly of the worst degree to go on with the experiment when your own body and life must pay forfeit for the inevitable failure.

When the young prefer to learn for themselves they are following paths successive generations have trod, but it is well in health, as in business, to profit by the mistakes of others.

The expectation of life has gone up during the last forty years, so that whereas a child born forty years ago had an expectation of living just over forty years, it now has over fifty. But this is largely due to the saving alive of the children.

When from any neglect or disease you shorten the length of life it is at the expense of the active and productive portion. You merely bring old age closer to youth.

The first essential is to have some knowledge of the structure of the human body, the food best suited, and the uses to which the body may be put.

Fiddling with the Machine.

The most dangerous chauffeur for a car-owner to possess is the man who, with a rudimentary knowledge of the machine, thinks he must be constantly fiddling with the engine.

What is essential is that he shall see the machine is kept clean, given proper fuel and proper lubricating oil, and not overloaded. He should be able to note if the machine is losing its efficiency. Periodic examination by special engineers is necessary to deal with the more complicated parts to discover early signs of undue wear and tear which must lead to a breakdown if not traced.

A mechanic would be ashamed if an engine under his care had to go to the repair shop for extensive repairs when other cars of the same age were as good as new.

The hospitals of to-day are full of cases of human machines broken down: some so badly that they will never again be fit for work, and many others, after patching up, will be capable of lower-grade work only.

Human Wear and Tear.

My advice would be—go, when you are feeling at your best, and let some doctor examine you to have a record of your condition. After that be examined periodically to have a check kept on your machine. If disease be found at any of these examinations it will probably be at the early curative stage. The bulk of my profession hold that "Prevention is better than Cure."

Detection of disease in the early and curative stages is what we aim at. It is more unwise to run the human machine until it breaks down than it is to do so with a motor-car. There is no store of spare parts to which we can apply for replacements.

At the periodic examination the doctor can give a few words of advice as to the best way of dealing with organs showing signs of wear and tear.

This idea is not new. The Chinese only paid their doctors so long as they kept them well.

Now, presuming you are in a reasonably sound condition, the next thing is to keep well. I would here suggest a series of essential points for your consideration.

The first essential is *Perseverance*. Do not give up the pursuit of health because some of the requirements involve a struggle under modern conditions of life. The question for most things is whether it is worth while. In middle age many look on themselves as too old to alter habits formed in youth, and the really old feel remorse and regret for neglect, and would gladly exchange their worldly possessions for health.

Looking Well.

Appearances count for a great deal, and the first appearance is often the deciding factor in many a career. So you can understand the need, even from a business point of view, of looking fit.

The remark, "I have no time to care for health," is stupid. How much of the day is spent in idle gossip, or in that most criminal of follies—"killing time"? What the ignorant and flippant speak of as the small things of health are often really matters of life and death.

The *healthy* are apt to think of their store as inexhaustible, and draw on the Bank of Health without a care, forgetting that Nature is a very stern banker and all cheques must be met.

The *Intermediates* are buoyed up by hope and often by quackery, while the *Diseased* are stranded between resignation and desperation.

Prof. Canaan on Gold Standard for India.

The adoption of gold standard in India with gold circulating as currency is considered in some quarters to be an impracticable idea, which will detrimentally affect the currency system of the other gold standard countries of the world, since the capacity of India to absorb gold is great. Prof. Edwin Canaan, whose opinions on questions of currency and international finance are held in high esteem, in his evidence before the currency commission at London expressed the belief :—

The production of gold is likely to remain high for a considerable period yet. The European and American demand for additional gold for currency is not likely to be as great as before the war, since (*a*) people who have once become accustomed to paper currency do not wish to return to gold coins (*e.g.* California has not returned to the habit of using gold coins), and (*b*) the superstition that immense cellarfuls of eternally idle gold are necessary to "back" or "support" the value of paper currencies, is like other superstitions, losing strength. Consequently, if the East takes no more gold than before, there is great danger of a further depreciation of gold, and which, of course, is the same thing as a further rise of prices in the gold standard countries. It is true that rise of prices makes things temporarily easy for the business man who lives by profits, but all experience goes to show that it tends towards general unrest and the spread of revolutionary and destructive ideas, that it ruins government finance, and should be avoided like poison by every wise statesman.

Additional demand from the East, therefore, if on a moderate scale, is not to be feared, but to be welcomed by the gold-standard countries of the West.

Apprenticeship in Germany.

A recent issue of *The Industrial and Labour Information* states that the employers' and workers' organizations in the printing trade in Germany have, in collaboration with the Chambers of Arts and Crafts (*handwerks-und Gewerbekammern*) drawn up regulations for apprenticeship (*Lehrlingsordnung*).

The regulations lay down the conditions under which apprentices are to be recruited, state how they are to be selected, the conditions of their engagement, their occupational training and the examination which they must undergo at the end of their apprenticeship. It also deals with the number of apprentices to be trained, in comparison with the number of adult workers. Among other conditions of admission, the apprentice must have finished his elementary studies with the report "satisfactory". According to the regulations it is considered desirable that pupils of higher schools should be introduced as apprentices into industry. In all cases their engagement must be preceded by a medical examination.

The number of apprentices who may be employed in the same undertaking has been fixed at 5 for every 35 adult workers. After this number, the undertaking will only be entitled to engage one apprentice for every 12 adult workers.

Provisions have also been made for the pay of apprentices. This is, during the first year of apprenticeship, to be 10 per cent of the highest adult wage, 20 per cent during the second year, 30 per cent during the third year and 40 per cent during the fourth year. The apprentice is also entitled to annual holiday of nine days for the first year, and eight, seven and six respectively for the following three years.

It is forbidden to employ apprentices on work other than that in their particular branch of industry.

Before passing the examination on the termination of his apprenticeship, the apprentice must pass an intermediate examination at the end of his third year.

Board of Economic Inquiry, Punjab.

I.

The following is a summary of the proceedings of a meeting of the Board of Economic Inquiry, Punjab, Urban Section, held in the Financial Commissioner's (Development's) Room, Lahore, on Tuesday, the 16th March 1926, at 11-0 A.M. with Mr. C. A. Barron, C.S.I., C.I.E., C.V.O., I.C.S. (*Chairman*), in the Chair :—

The minutes of the meeting held on the 8th December 1925, were taken as read and confirmed.

Cost of Education in the Punjab.—As Mr. Garbett was not present, and no Report had been received from him, the consideration of this question was postponed till the next meeting.

(Mr. Garbett's Preliminary Report has since been received.)

The Decay of the Sugar Industry in the Jullundur Doaba.—The Board considered the figures relating to the production of sugarcane in the Jullundur Doaba and in the Punjab as a whole, which had been collected and circulated by the Honorary Secretary. Mr. Garbett's note calling attention to the fact of the fall in the water-level in that district, and Mr. Wilsden's reply were also read. Some observations collected by Mr. Strickland were also submitted to the Meeting. It was noted that the production of sugarcane in the Jullundur Doaba has decreased since 1867, while the production for the Province as a whole has increased considerably; but this was a matter which concerned the Rural Section. It was recognized that in the production of *gur*, the small factory had been largely superseded by the larger as means of communication had improved. The Board, however, did not feel that an inquiry into this matter would yield important results, and it was therefore agreed that the matter be dropped.

An Inquiry into the Organization of the Railway Workers in the Punjab.—Mr. Abel reported that he had interviewed the N. W. R. officials in connection with this inquiry, and he was given to understand that the railway authorities are at present themselves conducting an inquiry into this matter.

Lt.-Col. Forster proposed that it would be advisable to wait till the results of this inquiry are made available, and to this the Board agreed.

An Inquiry into the Earnings and Conditions of Employment of Artisans of the following trades: Blacksmith, Fitter, Carpenter and Bricklayer.- Dr. Rawlley reported that a Committee is at present sitting in the Industries Department inquiring into the wages of blacksmiths, fitters and carpenters in connection with the scale of salaries to be paid in industrial schools, and undertook to place the results of his inquiry at the disposal of the Board when completed. He also stated that he would put his Industrial Surveyors on to the question of the wages of bricklayers.

An Inquiry into Earnings and Conditions of Labour in the Printing Trade in Lahore.- The Questionnaire drawn up by the Honorary Secretary was considered by the Board. It was agreed that members should send to the Honorary Secretary suggestions for improvement within the next fortnight.

The Board decided to ask Mr. Abel to act as Member-in-Charge. An investigator should be appointed for six months, and the Honorary Secretary was authorized to make an appointment in conjunction with the Member-in-Charge.

An Inquiry into Unemployment amongst Graduates in the Province.- The note and Questionnaire submitted by L. Vishnu Dutta were fully discussed. The Honorary Secretary read a letter from the Secretary, Punjab University Appointment Board, which stated that the University was not in possession of the addresses either of the students who has graduated during the last ten years, or of their guardians, and that this information could only be obtained from the Principals of Colleges.

A letter was also read from the Hon'ble Member for Finance in which it was stated that any statistics the Board could supply on this question would be useful to Government.

The Board was of opinion that if a Questionnaire was to be circulated to graduates, it should be very much simpler and shorter than the one proposed by L. Vishnu Dutta, and his detailed Questionnaire was accordingly amended. It was agreed to confine the inquiry to B.A.'s and B.Sc.'s, and to those who had graduated the last five years. The Honorary Secretary was instructed to obtain the names and addresses of these from the Principals of Colleges and circulate the simplified Questionnaire to them. He was authorized to obtain such clerical assistance as was necessary for the initiation and conduct of the inquiry.

Housing Conditions in Lahore City.- The Honorary Secretary reported that he had interviewed Miss Bose, Principal of the Victoria Girls' School, and in the event of her retiring in July she would be prepared to conduct this inquiry. Lt.-Col. Forster was added to the Sub-Committee already appointed to draw out the lines on which it should be conducted, and it was agreed to obtain and circulate to members of the Sub-Committee before their meeting such literature as was procurable on the subject. The Sub Committee would then draw up the general lines of the Inquiry.

II.

The following is a summary of the proceedings of a meeting of the Board of Economic Inquiry, Punjab, Rural Section, held in the Financial Commissioner's Room, Lahore, at 11-0 A.M., on Wednesday, 17th February 1926, with Mr. C. M. King, C.S.I., C.I.E., I.C.S. (*Chairman*), in the Chair:-

Before proceeding with the Agenda the Chairman called attention to the fact that Mr. Coatman had accepted a post with the Government of India and was not likely to be back in Lahore. The Board instructed the Honorary Secretary to write to and ask Mr. Coatman whether in these circumstances he would be in a position to complete the Inquiry in the Sialkote District.

The Chairman suggested that Mr. Darling should be co-opted as a member of the Board until such time as a regular vacancy occurred. To this the Board unanimously agreed.

The minutes of the Meeting held on the 19th January 1926 were taken as read and confirmed.

Agricultural Indebtedness Inquiry.- The Honorary Secretary read a letter from Mr. Strickland suggesting that investigators engaged on General Questionnaire Inquiries should collect figures on the lines of the Questionnaire drawn up for the above Inquiry. After considerable discussion, it was decided that Mr. Strickland should consider how far it was possible to fit the above in with the Chapter on Indebtedness in the General Questionnaire, and should put up tables showing the data wanted for consideration at the next meeting.

General Economic Inquiries.-

A.—Begun in January 1925.

(*a*) *Amritsar Inquiry.*— Mr. King reported that the investigator had submitted his Report, but large portions of it would have to be re-written. He proposed, as an alternative to the previous Resolution of the Board at the last meeting, that, since S. Gian Singh would not be doing any work for the Board, his services may be dispensed with from the middle of this. He would, however, call S. Gian Singh to Lahore and go over the Report with him. For such days as S. Gian Singh was with him he should be paid at Rs. 6 per diem *plus* T. A. To this Board agreed. Mr. King promised to submit his Report by the end of April.

(*b*) *Multan Inquiry.*- Mr. Emerson reported that the Report of the investigator so far as he had seen was most satisfactory.

(*c*) *Rohtak Inquiry.*— The Honorary Secretary read a note he had received from Prof. Brij Narain intimating progress. The Board sanctioned extension of service to the investigator till the end of March 1926.

(*d*) *Rawalpindi Inquiry.* The Honorary Secretary read a note from Mr. Stow, Member-in Charge of the Inquiry, intimating that he had received two portions of the investigator's final Report. The Board noted that Mr. Ahuja was not strictly following the Questionnaire in his Report, and requested the Honorary Secretary to write to Mr. Stow and ask him to bring this fact to the notice of Mr. Ahuja, who should follow the Questionnaire as closely as possible in writing up his Report.

B.—Begun in March-April, 1925.

(*a*) *Jullundur Inquiry.*—No report had been received from Mr. Calvert.

(*b*) *Lyallpur Inquiry.*—Mr. Roberts reported that S. Randhir Singh had started work from the 7th of this month and hoped he would be able to pick up the threads of the work as left by S. Jamal Singh (deceased).

C.—BEGUN ON 15TH JUNE 1925.

(*a*) *Hissar Inquiry.*—The Honorary Secretary reported that Mr. Trevaskis intended to visit the village of inquiry on the 26th of this month, after which he would be able to report more fully on the progress of the work.

(*b*) *Sialkote Inquiry.*—The Honorary Secretary read a note from Mr. Coatman intimating progress.

(*c*) *Dera Ghazi Khan Inquiry.* - Mr. Wilson reported that he had seen the investigator and gone over his work with him. The work was of an unsatisfactory nature, and Mr. Wilson feared that the prospect was not promising. After full discussion the Board decided to dispense with the services of this investigator and stop the Inquiry as from the end of this month.

D.—NEW INQUIRIES.

(*a*) It was decided to start four Inquiries in April and four in October next, if suitable investigators could be found. The following districts were selected for the April inquiries :—

(i) *Jhelum District.* - Member-in-charge, Mr. Wilson ;

(ii) *Gujranwala District.*—Member-in-charge, Mr. Strickland ;

(iii) *Gurgaon District.*—(A barani village in the Gurgaon-Rewari-Ferozepur Jhirka tract) : The Honorary Secretary was requested to write to Mr. Brayne, and ask if he would act as Member-in-charge ;

(iv) *Lahore District.*—(A village in the neighbourhood of the Lahore City) : The Honorary Secretary was requested to write to Mr. Darling, and ask if he would act as Member-in-charge.

(*b*) The suggestion made for an inquiry in a village in the Muzaffargarh District, as well as that for one into a village of peasant-grantees in the Lower Bari Doab area, was postponed till the October meeting.

(*c*) A suggestion was made that the new investigators should work with an old investigator for two or three weeks. This was endorsed by the Board.

(*d*) The Board authorized the Honorary Secretary to advertise for investigators and call together the Members-in-charge as the Selection Committee.

A discussion took place on the question of the reproduction of maps for inclusion in the Reports. The Honorary Secretary was authorized to make inquiries.

* * *

Some Aspects of Batai Cultivation in the Lyallpur District of the Punjab.—The Board thanked Mr. Stewart for this most interesting note and suggested that it would be most valuable if similar data could be collected for the next five years. The Board meantime sanctioned the printing of 2,000 copies of the above note.

Mysore Economic Conference.

Board of Education.

The following is a summary of the proceedings of the Sixth Meeting of the Board of Education, held on Saturday, the 30th January 1926, at 8-30 A.M., and again at 3-30 P.M., in the Vice-Chancellor's Room, Central College, Bangalore, with Rajatantra Pravina, Dr. Brajendranath Seal, M.A., PH.D., D.SC. (*Chairman*) in the Chair.

(*a*) *Standardization of Equipment of Schools, (including School Libraries).*

The Government Order No. E. 5710-13—Edn. 487-20-7, dated the 6th April 1923, had standardized the articles of furniture and the apparatus and appliances to be supplied to the various grades of schools - High, Middle, Primary and Normal Schools. But it was reported that the cost of equipping schools to the standards laid down and of replacing articles worn out by use amounted to about 18 lakhs of rupees and that even the revised estimates framed by the Education Department amounted to six lakhs of rupees. As it was not feasible to incur such a large expenditure, the Sub-Committee carefully scrutinized the lists appended to the above Government Order with a view to classify the various items according to their urgency, keeping in view financial exigencies, and accordingly recommended that certain items should be treated as essential and should be supplied urgently, that certain other items were desirable, though not essential, and should, therefore, be supplied gradually as funds permit, and that certain other items might be omitted for the present from the list of standard equipment.

(1) The Board after carefully going through the revised lists as forwarded by the Sub-Committee resolved that the revised list be approved with modifications.

(2) It was also resolved that the question of adapting Kindergarten to Indian conditions be taken up and a small Committee of three persons be appointed by the Department for this purpose and also that early steps be taken for training teachers in Kindergarten methods as thus adapted.

(*b*) *Institution of Fellowships for High School Teachers.*

(1) *Professional Courses.*—The Chairman remarked that the opening of the Bachelor of Teaching Course in the University would facilitate the recruitment of trained graduates to the Department who will at all events be preferred to untrained graduates in future appointments to Assistant Masterships in High Schools, Head Masterships of Middle Schools and Assistant Inspectorships of Schools, but that the professional training of a large body of untrained graduates already in service was also an urgent problem. There were two alternative courses open, *viz.*, (i) to continue the present practice of deputing teachers for training in the B. T. class, in which case only teachers who have had experience of not less than three years and not more than eight years should be selected (if training is to confer maximum benefit on the teachers) and in order of seniority (length of service)—such deputations accordingly continuing for a period of 8 years, or, (ii) to organize summer courses in the Principles and Methods of Teaching with demonstrations, extending over a period of two months, in which case all the teachers possessing the necessary experience could be trained in three years. The Chairman added that though the former arrangement would be preferable from an educational point of view, yet in view of the heavy cost involved, *viz.*, Rs. 60,000

as against probably Rs 7,000 or 8,000 in the latter case for the same number of teachers. Government might not find it feasible to continue the arrangements for training a considerable proportion of teachers already in service in addition to providing for the training of fresh graduates in the Teaching Department of the University for future appointments in the Education Department.

After some discussion, it was resolved to refer this question back to the Sub-Committee, along with the above remarks of the Chairman, for re-consideration.

Resolved also that the existing practice of deputing 12 graduate teachers for training be continued for 1926-27.

(2) *Higher Degrees.*—Resolved that a recommendation be made to the University that teachers of not less than four years' standing may be allowed to appear privately for the M.A. Degree examination.

(3) *Post Graduate Study.*—Resolved that, in exceptional cases, study leave might be granted to teachers who show any special aptitude for original work or research and that rules for study leave may be framed for this purpose.

(4) *Vacation Courses.*—Resolved that the University authorities be requested to arrange special vacation courses in academic subjects for teachers.

Resolved also that, with a view to the introduction of Elementary Science in Middle Schools, a special syllabus may be prepared for a vacation course in that subject for Middle School teachers, and that arrangement may be made for deputing for such training a suitable number of Middle School teachers such as have offered science subjects for the S.S.L.C. or the Entrance Examination.

Re. Resolution No. 8, moved at the Representative Assembly, (Birthday Session, 1921.)

After carefully going into the question from its inception, it was resolved that of the allotment of the Backward Class Scholarship Fund of one lakh, the Backward Classes (other than the Depressed Classes) would be entitled, on the population basis, to four-fifths of the total amount, *i.e.*, roughly Rs. 80,000, whereas now the total allotment for them, including Mahomedans, amounts to nearly 82,000. No revision of the allotment is, accordingly, necessary.

Re. Resolution No. 23 of the Representative Assembly (Birthday Session of 1924).

Resolved that as at present no community having a population of three lakhs and above is combined with other communities for the purpose of awarding Backward Class Scholarships, except the Kuruba Community which has a population of over five lakhs, it is recommended that the Kuruba Community may be treated as a separate community for the purposes of the award of scholarships.

Read Proceedings of the Meeting of the Special Sub-Committee, held on 16th January 1925, *re.* Rules of Admission, etc., relating to Adult Night Schools.

Admission.—

"Resolved :—(i) That the Board re-affirms the Resolution passed at its Third Meeting, held on 7th February 1925, *re.* the age of admission to Adult Schools, *viz.*, that the pupils to be admitted should be not less than 18 and not more than 40 years.

(ii) That there should be two terms per year, and that admissions should be made twice, *i.e.*, at the beginning of each term.

(iii) That admission to the I, II, or III year classes, as the case may be, should be according to the fitness of the applicants.

(iv) That the months of admission and the length of the terms should be left to be determined by the Department of Education.

(v) That provisions, however, need not come rigidly or invariably at the end of the year. Owing to the varying rates of progress of pupils, there should be a greater flexibility in promotion."

Examination.—

"Resolved :—(vi) That examinations be held at the end of each term, with promotion from the first term to the second term or from the second term of any one year to the first term of the next year. Promotion may also come during the term in exceptional cases of progress.

(vii) That the examination at the end of the first term in each year should be oral and conducted by the teachers. Examinations at the end of the second term in the first and second years should also be oral and conducted by Assistant Inspectors. The examination at the end of the second term in the third year should be both oral and written and conducted by the District Inspector, whenever possible. Besides these, periodical oral tests should be conducted by teachers and marks entered in the registers.

(viii) That the inspecting officers conducting these examinations should enter in their reports their observations on the condition and efficiency of the schools.

(ix) That the results—names of successful candidates in the final examination, their rank and centre—may be published in the *Gazette*.

(x) That certificates of merit, signed by the Inspector-General of Education, may be issued.

(xi) That these certificates and prizes for regular attendance, good performance in class work, and gifts of character—for which the sympathy of the local bodies and the prominent citizens may be enlisted—may be given at a public function under the presidency of the Deputy Commissioner.

Curricula and Text-Books.—

"Resolved :—(xii) That, as resolved at the Third Meeting of the Board, held on 7th February 1925, the Inspector-General of Education be requested to appoint a Committee for drawing up the curricula and preparing text books.

(xiii) That, for the present, the curricula prescribed, in the Inspector-General's Notification D. No. 129, dated 11th May 1917, may be adopted for the first year course and one text-book for the use of teachers may be published including useful information relating to history, geography, civics and current topics, social and economic institutions, as well as natural phenomena, such as seasons, etc. The pupils may use the ordinary text books in history, geography, arithmetic, etc., in Kannada

(xiv) That four itinerant teachers, each with a set of lantern slides, charts, diagrams, exhibits, natural as well as social, stereoscopic slides, etc., may be appointed to visit these schools and give demonstrations and expositions. They will also lecture on civic and historical topics.

(xv) That arrangements will have to be made for the training of teachers for Adult Schools in industrial centres.

(xvi) That Government be requested to appoint a Committee to work out the financial implications of the scheme and also to consider the question of organization and management."

Books in Brief.

A Sketch of the History of India.

(From 1850 to 1918)

By H. Dodwell, M.A., Professor of the History and Culture of the British Dominions in Asia in the University of London. Messrs. Longmans Green & Co., 39, Paternoster Row, London, E.C. 4. Price 6*sh.* net (With Maps).

A volume of this kind has been a felt want for a long time now. Mr. Dodwell deserves accordingly to be congratulated on the very readable book he has produced on a subject of the very first importance. We have read the book in a spirit of admiration, though with a critical eye. Parts of Book I might have been written by an ardent Congressman: so unobjectionable is the matter in it and the manner in which it has been presented. A recurring thought in them is this: that during the half a century that has elapsed the control has stiffened from top to bottom and that the District Officer has ceased to be the old Subadar or Tarafdar. Mr. Dodwell reiterates the fact but so far as we can see, he does not analyze the position except in a general way. His chapter on Administrative Policy (Book I, Chapter III) sketches the conditions that led to this centralization but does not indicate sufficiently definitely how the District Officer lost his position as the result of the policy pursued. We do not see among the books consulted by him any reference to Trevelyan's well-known book *The Competition-Wallah*. If he had consulted it, he would have seen the why and the wherefore of this position. If he had read Mr. Le Fanu's charming *Salem Manual* or the still earlier Dyak's *Salem: A Collectorate*, he would have more clearly grasped the conditions under which this tendency to centralization and towards bureaucratization first exhibited itself. The fact has to be faced that the centralization of Government instead of being an evil proved to be the remedy for many an ill from which the administration suffered and the I.C.S. under the competition system worked the bureaucracy in a manner that no bureaucracy has ever been worked so far. The historic Montagu denunciation of its being "wooden" became too true, for the lengths to which bureaucratization had gone, made it impossible for the Home Government to understand the real position in India or the varied grievances of the people who groaned under its orders. This is not the place to follow up this line of criticism but we should be glad if Mr. Dodwell will note it and pursue it when a new edition of his, in some respects, brilliant work is called for.

Mr. Dodwell's volume is, in one sense, the best justification of the Indian National Congress to which he refers at length in it. It shows how fundamentally just was Mr. Hume's idea of a new India and how it justifies, as nothing else can, his belief in the essentially fair attitude he took—though a retired Civilian—towards India. He stands fully vindicated to-day. If the Montagu Reforms made Mr. Hume a benefactor to India, Mr. Dodwell's has made him nearly a hero among his own countrymen. Thus is action—moral action—in the political field justified in the eyes of the world. Mr. Hume held justice greater than prestige and his position and view-point has been held correct by the verdict of history.

In Book II, Mr. Dodwell deals with the Foreign Policy of the Government of India. The whole of this part of the book is well written, particularly the chapter of the Second Afghan War which is a striking piece of work from a purely literary point of view. It is realistic to a degree and is full of word pictures. Mr. Dodwell, however, is hardly correct in ignoring the Indian criticism on Lord Lytton's "War" as it was called. It raised the ire of Gladstone and the fall of the Conservative Ministry was, as Mr. Dodwell himself admits, due to the forward policy of Lytton. Nor is Mr. Dodwell quite so happy in his delineation of the position of Native States in the political system of India. He denies that they are *isolated* States: he opines that common subjection to the Crown has converted them not only into loyal subjects of the Crown but also impossible as despots in their own areas. Neither proposition would be assented to by the parties concerned or their own peoples. The fact is that each State is still an isolated unit by itself, despite treaties and instruments of the kind he mentions, each Ruler of an Indian State has to fight his own battles with the Government of India, concerted action being all but impossible and as regards interference into its affairs, it is only in extreme cases that it is possible on the part of the Government of India. The problem of the Native States is much deeper than it has been possible for Mr. Dodwell to probe. It is one of the questions of the hour and no solution of the Indian problem is at all possible without their status in it being definitely conceived and worked out. This is one of the problems left out of consideration by the Montford Report (See Chapter X), and is staring in the face to-day Governments and publicists alike in India and in England.

In another chapter (Education and Employment) Mr. Dodwell touches on a subject at once delicate and difficult. But he writes with ease and comfort. So at least it strikes us. He has the courage to call a spade a spade. In his opinion, despite the Munros and Malcolms, the higher officials in India form "a closer caste" than even the Mansabdars of Akbar. Incidentally he praises Lord Lytton for his statutory Civil Service, which was so cordially disliked by Indians and Europeans alike. He thinks—on grounds he does not mention—that it would have, if consistently followed, "anticipated and avoided many of the later difficulties that have emerged." The "if" however is a big one. Why did the scheme fail? He blames the "working" of it; just the reason that is now being given out for the Montford Reforms. If they fail, the reason would be the working of them. But why was the working wrong? Because he thinks the scheme was "worked" only to enable members of the aristocracy and not the middle class to get into the higher range of posts. Why was it so worked? The psychology of it all Mr. Dodwell fails to probe and there is the defeat of his performance. If the truth is to be told it is this: Lytton failed or refused to see, in common with his countrymen, that a larger step was necessary in the best interests of all, but he would not move as his instincts were thoroughly conservative. His countrymen are doing the same to-day and going back to nominations despite the Reforms Act and a history of events covering half a century in India. So does history repeat itself. Mr. Dodwell rightly insists on the fact that while the Competition-wallah has increased efficiency, he has not made for racial friendliness as his predecessor the Haileybury man did. He pointedly refers to the abandoning of the Indian Service by the latter. We would add from our

knowledge that so great was the dislike of the old Service families to the new system introduced by Macaulay, that some of them took vows not to send their sons into it. It is said of John Duncan Gleig, who was at one time Principal Collector of Salem, that he told his devoted subordinates that from the day the competition-wallah came into being, none in his family would enter the Indian Service! And no Gleig has so far entered it! He is said to have pitied the India of the future—of the India of the competition-wallahs? Mr. Dodwell is, we think, only confirming the prescient misgivings of the venerable Gleig. The competition system, as he epigrammatically puts it, made possible a Macaulay at the expense of a Munro, which is too sad to contemplate, for the best praised and best paid service in the world.

Mr. Dodwell passes in the next two chapters of his book (*Political Sentiment* and *The Policy of Reform*) to matters of practical current interest. His criticism of Ripon in the former for abolishing the Lytton Press Act is too palpably unjust to pass unchallenged in this country. His main point is that Ripon was, in doing this, too much in advance of his time. As he could not adumbrate a policy of responsible government, so he was debarred from freeing the Press. Mr. Dodwell forgets that it is exactly because of the free press—or the so-called free Press, for the Press after Ripon has been shackled—that responsible Government has at all been thought of. It is no use quoting Munro in a case like this: for that statesman's view in this matter should be taken with the current prejudices of his times. The Press in his time, such as it was, was in bad odour and he was largely—there is reason to fear—influenced by its then position in his prognostication. His advanced views as to the destiny of India and Indians ill accords with his views on the Press. There is in that single point, much to ponder for critics who would fain quote him to suit their purpose. It is high time that it is remembered that a free Press, a free Government and a free friendship between the two countries are the things towards which the best political sentiment is now running. Statesmanship consists in recognizing this and making endeavours towards reaching the goal easier and earlier. If Ripon tried to realize it and attempted to provide for it, is he to blame? By-the-bye, we would add that the description of old-world Anglo-Indian Editors of India as "Free Merchants" is not quite correct. Boyd was not a free merchant who had failed in his commercial calling; nor was Silk Buckingham one of that kind, nor again Buist, "Bloody Buist" as he was called a broken down "Free Merchant." It is to be feared that Mr. Dodwell while he is uniformly kind to Lytton is equally uniformly unkind to Ripon. Why is this so? We attribute no motive, far be that from us. It is apparently his predilection, political and other and no more. He describes Ripon's Ilbert Bill an "astonishing blunder" Why not, in view of the abolition of the Repressive Laws, a couple of years ago, term this—as he does Lytton's statutory Civil Service Scheme—a scheme of reform that was ill understood and little appreciated and hence opposed by parties who least could foresee the evils that might happen by the rejection of a measure of that kind? As he rightly puts it, it was the beginning of the agitation for political rights in India in right earnest—an era which has not yet ended and apparently will not end until the cherished goal is reached by Indians. Mr. Dodwell rightly puts it when he states that the claim for "predominance" began to be met from that day forward by the claim for "equality". The battle is not yet over but the victory is in sight. Mr. Dodwell's running summary of political agitation in India, however, is only partially correct. It is both wrong and inaccurate; it is wrong because it omits essential facts and it is inaccurate because it sets up wrong data. Bradlaugh was not the only champion in the Commons. Burke was the favourite political philosopher and not Tom Paine, though we are mistaken in mentioning Burke's name, for Mr. Dodwell has managed to write a book on India without so much as mentioning his name. Bal Gangadhar Tilak was not only "a man of remarkable talents" but also a much misunderstood man, for the hero he proclaimed has been latterly blessed by greater men than he; Lord Curzon's partition of Bengal had politics for its sheet anchor and not administrative convenience; Curzon's Educational policy was opposed not for political reasons but for sound educational reasons and his critics have proved true; his outburst against Indians (*pace* his theory of truth in the abstract) was a political mistake, if not a crime, and last but not least the Congress was neglected by the powers-that-be too long for the trial of any palliatives and the great blunder was committed of treating it with contempt while it should have been heard. The cry it sent up from the Economic, Administrative, and Military view-points was left unheeded by a bureaucracy that believed in its own powers until it was too late. The remedy came in the Reforms Act of the Montford Regime—fully fifty years too late and that in a halting, half-hearted manner.

We now come to Mr. Dodwell's last chapter, the one dealing with the policy of Indian reforms. It is a sketch of the Minto-Morley and the Cholmsford-Montagu Reforms. Mr. Dodwell is disposed to assign to Minto greater prominence in regard to the former than to Morley. His picture of what Morley might have been in India as a member of the Civil Service—provided he was a little less clever and his parents a little less well-to-do—is more amusing than just to him and his commanding talents. Mr. Dodwell forgets that Indians know Morley was Chief Secretary for Ireland and was an administrator of a type never known even in England. To belittle him cannot raise Minto in the estimation of the public of this country. Minto was guided by the civilians round about him while Morley was, certainly, guided by the inherent conservatism of the Englishman that dominated his character. The failure of the Reforms associated with the names of these two great British worthies is a sad page in Indian political history. It required a war to show the falsity of the assumptions underlying them. It required also a courageous Jew—whose race had suffered in the West as none had suffered—to visualize the position and put it to his own countrymen. If one Jew made the Queen of England the Empress of India, another it was who made India hold on to Britain on anything like terms honourable to both countries. The policy of suspicion has slowly begun to give way but it is not yet wholly dead. That was the policy underlying the Minto-Morley Reforms which Mr. Dodwell describes as a "sincere attempt to render Indian opinion more accessible to, and more influential with the Government, and that over a wider field of administration"—a statement which is true to the word but hopelessly false in the spirit. His own reading of its basis falsifies his conclusion—it was undemocratic, it set up the classes one against the other and it was plainly destructive of the evolution of a common nationality. This was done

consciously and that was the grievance about it. Mr. Dodwell admits as much when he says: "They were concessions to educated opinion; but they were not the real thing." We do not admit that opening the Executive Councils to Indians is "the real thing". The real thing is the dethroning of the idea of the inefficiency or the inferiority of the Indians as a race in the governance of their own affairs in their own country. That Mr. Dodwell knows this is plain from the very last sentence of his book: "The remedy lies.....in steadily cutting away that race discrimination which forms the worst inheritance of the period that has closed."

Mr. Dodwell's account of what led to the rise of the so-called Revolutionary Movement in India (1906-17) is a rapid summary of Sir Verney Lovett and it is needless to detail it here. The Moderates, unfortunately for them, come out second best in this book; they appear as the handmaids of Government and ready to yield to the cry of "Rally the Moderates". The vein of cynicism that runs in this part of the narrative is too palpable to need mention but there must be something too grossly wrong with a political system which requires this perpetual rallying to get on with "good government". At last even Mr. Dodwell, whose chosen view-point is frankly adverse to Morley and his political abilities, allows himself the privilege of the following reflection:—"Morley's high political ideals and great desire for the welfare of India that made him so difficult a task master. The fault lay in the system into which we had blundered, and which made a zealous, active and high-minded Secretary of State an obstruction, and at times a danger." Mr. Gandhi too thinks that the individual Englishman is a good man but his "system" in India is past redemption. When men like Gandhi and Morley agree on a point of this nature, there must be something deplorably wrong about it. Mr. Dodwell must know that the plea that the Government of India has always been first in Administrative Reforms is not one that will pass unchallenged in this country. The Government of India in that case would not have been described in the trouncing language of Mr. Montagu. Mr. Dodwell should also be aware that it is because the Government of India is in essence "a close body of officials", which, as he himself elsewhere puts it, is worse than a caste and as such cannot be depended on that progress is not possible in this country. That was the very reason why Morley controlled it, and why he would not withdraw his strong arm away from it. But if the Secretary of State to-day has lost some of his powers over the Government of India as the result of the Reforms Act, and the Government of India has gained some independence of him, it is because it is to-day—at least in argument what it was not yesterday. The ideals have changed as well as the objectives of governance and so the 'system' has had to give way, to however small an extent it may be.

We think we have written enough on this book. It is well conceived and well written. Its severest critics will not deny to it its eminently readable character. But it has its limitations and to some of these we have referred to above. We should be glad to see Mr. Dodwell essay a work of this nature with a greater sense of freedom and with a higher historical sense of sifting the truth. Mr. Dodwell has the makings of a good student of current affairs but he should *not* attempt to sacrifice substance for effect any more than stick to popular prejudices to keep up the semblance of a cautious critic.

In a work so well got up, both as to printing and binding, it seems graceless to point to any errors. In view of a future edition, however, we would invite attention to a rather unhappy error on page 226 where the word "Fevenue" ought to be "Revenue".

C. Hayavadana Rao.

Raja Ram Mohun Roy.

Messrs. G. A. Natesan & Co., Madras. Rs. 3.

This is a compendious edition of the writings and speeches of Raja Ram Mohun Roy, the great Indian patriot and reformer. Its great merit is its size. The selection is a representative one and includes among others his well-known memorial on the "Freedom of the Press" and his tractate on "English Education in India" which formed the basis of Macaulay's famous Minute. The biographical sketch prefixed to the volume is well written, though somewhat long. The autobiographical sketch at the end of the volume is an useful addition and shows the difficulties against which the great pioneer Reformer laboured. We have no doubt that the writings of the Raja will be much appreciated by Indians and Europeans alike in the present handy volume issued by Messrs. Natesan & Co.

Indian After-Dinner Stories.

By A. S. P. Ayyar, I.C.S. Messrs. Taraporewala, Bombay. Rs. 4.

Light reading is a necessity if life is not to be made monotonous. Mr. Ayyar's stories have the merit of being short and telling to a degree. Some of them may not always point to a moral, but they might lead to introspection on the part of the reader. "A story has no leg to stand upon" says a proverb, any more than the sky has any. This test is truly fulfilled by the stories included in this collection and they throw, accordingly, flash lights upon aspects of life in this country which might otherwise pass unnoticed. We would gladly commend the publication to those who would like to know the people of this land as they depict themselves. We would, however, add the caution that a story like a proverb brings into relief only one trait in a man, caste or nation and is unduly stressed with a set purpose. Wise men will note this when reading the stories and not set down anything to the discredit of the parties described in them.

Oleaginous Products and Vegetable Oils.

The International Institute of Agriculture will publish early in June a statistical enquiry into the production of and trade in oleaginous products and vegetable oils, which will complete and bring up to date the information given in the monograph *Oleaginous Products and Vegetable Oils* which was published by the Institute in 1923. The material collected is of special interest, including the data of the production and trade from 1921 to 1924, the comparison with the figures for the five years previous to the war being made throughout. In this way a record is supplied of the important changes which have taken place in the last few years both as regards the cultivation of the various oleaginous raw materials, and in respect of the international trade in these materials or in the oils extracted from them. In the introduction a full account is given of the most important facts which in regard to the different crops and products are to be deduced from the statistical material brought together in the volume.

The Mysore Economic Journal

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Mysore Representative Assembly.

Address by Amin-ul-Mulk Mirza M. Ismail, O.B.E., C.I.E.

Dewan of Mysore.

*[We give below the full text of the Address delivered by Amin-ul-Mulk Mirza M. Ismail, O.B.E., C.I.E., Dewan of Mysore, to the Mysore Representative Assembly, which opened its Birthday Session at Mysore on 14th June 1926. The Speech covers a wide field—economic, financial and administrative - and is, in our opinion, a thoughtful one from many points of view. It deserves to be widely read and pondered.—*ED., *M. E. J.*]

MEMBERS OF THE REPRESENTATIVE ASSEMBLY. - It is my privilege, by command of His Highness the Maharaja, to welcome you to the labours of another Session.

It would not be in accord with your feelings or my own it we entered upon our work without paying a tribute to my immediate predecessor, Rajamantra Dhurina Sir Albion Banerji, who laid down the rems of office recently after a distinguished service of ten years in this State.

Many of you, gentlemen, came in close touch with him both as a Member of Government and as Dewan, and you had many opportunities of appreciating his great ability, tact and quickness of decision. It is not necessary, therefore, for me to dilate on those qualities which marked him as a man and an administrator, nor on the able manner in which Sir Albion presided over and conducted the proceedings of this Assembly. You will, I am sure, join with me in wishing him every success and good fortune in the further career which he has chalked out for himself.

To two other changes in the personnel of the Government, you will expect me to make a reference here. After a devoted service of 34 years to the State, Mr. K. R. Srinivasa Iyengar retired last month from the office of First Member of Council, and the members of this House will no doubt remember the useful contribution which, from his experience and knowledge, he was able to make to the discussion of administrative problems here. It is the sincere wish of us all that his retirement from official service may be but the opening of a long period of non-official service to the public in civic, economic and other fields of activity and that he may long be enabled to enjoy his well-earned leisure in peace and happiness.

The other officer of the State who used to be here during recent sessions, but is not to be seen in the same position to-day, is Rajatantra Pravina Dr. Brajendra Nath Seal, the distinguished Vice-Chancellor of our University. Owing to considerations of health, he was obliged, some weeks ago, to relinquish the office of Extra Member of Council, which he had held for the short period of a year and four months. During that period, however, his deep insight into our educational needs and his profound knowledge of allied matters were of the greatest assistance to Government. His enthusiasm for the cause of learning is well-known; and he will hereafter be able to devote his time and energies exclusively to the promotion of that great cause, both as Vice-Chancellor and as Educational Adviser. I sincerely hope that the University and the State may long continue to profit by his wide experience and expert counsel.

Before I go further, it is my painful duty to refer to the death of Mr. C. Srinivasa Rao of Chikmagalur, which occurred in April last. He had been connected with the Assembly ever since its inauguration 44 years ago and was one of its most respected members. His death is a great loss to the public life of the country and we shall long miss his familiar figure in this House. I would also refer, with the deepest regret, to the loss we have sustained, since you last met, through the death of Mr. K. S. Channabasappa of Gundlupet.

An Outline of Policy.

Let me now try to indicate in a few brief words the ideals and policies which it is my ambition to pursue in endeavouring to discharge the responsibilities which His Highness the Maharaja has been pleased to entrust to my care. It is acknowledged on all sides that the policy of the Government of His Highness has always been to devote all its resources and powers to the advancement of the State in all directions--material, moral and, in a broad sense, spiritual; and I would earnestly assure you that those aims and efforts will not suffer diminution at our hands. It is obviously superfluous that I should now traverse the entire ground of our development programme, reciting each item and re-affirming each policy. While we accept all the objects and plans bequeathed to us by previous administrations, and intend to do our best for them in the light of the conditions of our time, let me pause to lay some special stress on one or two points.

The economic question stands first among all our questions; and it will continue to receive our constant

and careful attention. To take the simplest, the most obvious and yet the most neglected of matters—the production and use of the necessities of life within the State. Home production, manufacture and use of the necessities of life, are the triple root of material prosperity, and the basis of all other forms of prosperity. The first step towards the larger attainment of such prosperity is the improvement of means and methods of agricultural production. To this, the Government will give all possible help. I need not emphasize, since it is patent to us all, the desirability of the development of agricultural co-operation and of technical instruction. But the success of such necessary movements depends less upon State patronage than upon individual initiative and work, not only for one's own benefit, but for the benefit of the country at large.

The Government are fully aware also of the need that exists for increasing facilities for industrial enterprise and for the expansion of trade, both inland and foreign. Much was attempted in these fields in our State, as we all know, by way of study and experiment in the past; and I am anxious that efforts should be renewed in the same direction, on more fruitful lines, if possible. Government will be ready to respond to any well-considered and practical suggestion for the encouragement of local enterprise, either in the field of large-scale manufacture or commerce, or in the field of indigenous arts and crafts.

We have all felt the need for the extension of avenues of employment—particularly for the middle and the poorer classes. This is undoubtedly the most pressing and the most widely felt problem to-day. But there is no royal road to its solution. Greater prosperity, for which all should work, will cause a natural increase of employment. The State will do what it can in this respect in the various works that are in hand or are under consideration. Such works need not necessarily be merely utilitarian. They may also be beautiful, for beauty and order are as necessary to the welfare of the nation as utility.

Then, look at the housing and sanitary conditions of our towns and villages. They can command neither comfort nor good health. Improvement in this respect must depend very largely on more earning capacity, for improvement means expenditure which affects both the Government and the people. This is another reason why special efforts should be made towards augmenting the natural production of the State. Where material increase flows through the life of a country, it carries better conditions over a wider area. I would, therefore, also urge that the development of handicrafts and village industries should be pushed on as vigorously as possible: and towards this end, I would bespeak the earnest thought and co-operation of non-official leaders. The growth of the agricultural and industrial activities of the people is bound to bring in its train not only material additions to individual and national possessions, but also a more wakeful and more vigorous national intelligence, a quicker civic and social consciousness, a finer aspiration and a better standard of living, and a more effective preparation for the higher objects of human existence.

With economic and educational development goes also political development. Indeed, political advancement is, at bottom, a question of public education; and this means, as all will agree, a process of patient study and careful preparation on the part of both the Government and the people. In this respect, Mysore affords an unrivalled opportunity for developing a form of Government which may serve as a type for study, and perhaps adaptation, by other parts of India. For such a form, we have no perfect model either in history or in contemporary life. By patient work and gradual thought and adjustment, our political system must be developed in the light of Indian tradition, of modern developments in India and elsewhere, and of the peculiar circumstances of Mysore. No problem could be more complicated or more inspiring; and it calls for clear and dispassionate thought with a mind completely divorced from fad and prejudice, and founded upon a serious regard for the realities of our situation and an honest sense of the attendant responsibilities. Further, action is the great teacher of doctrine, and strenuous work to improve the people's lot will bring political as well as economic wisdom.

I would, therefore, appeal to you that you might spare all the time and thought that you possibly can to the task of promoting public work and popular organization in your localities. We shall be eagerly looking for instances of non-official initiative and effort in reviving rural industries, in helping joint action in manufacture or trade, in building up co-operative societies and aided schools, and in making the institutions of local self-government more successful. You are aware that the Government have been actively considering some measures for the re-organization of our system of local self-government. I can assure you that anything calculated to encourage and develop the civic sense of our people and to stimulate municipal enterprise will have the hearty support of Government. Many non-official gentlemen have already rendered noteworthy public service in this field: and we confidently ask for more.

Financial.

It is usual on this occasion to deal with the financial position in three years, namely, the last closed year for which audited accounts are available, the year which is now current and will soon close and that which will open from the first of the next month. I shall follow this practice and make a brief survey of the realized results of 1924-25 and the anticipated results of 1925-26 before presenting the Budget programme for the coming year.

Accounts of 1924-25.

The total revenue of the year was Rs. 340 lakhs and the expenditure chargeable to revenue was also about the same amount. Railways, Forest, Income and Miscellaneous Taxes and Stamps did better than was expected and the improvement under the first two of these heads was appreciable as it amounted to as much as Rs. 15 lakhs. Compared with the budget, there was a falling off under Land Revenue, Excise, Assigned Tract Revenue, Mining Revenue and Interest. The decline under Excise was nearly Rs. 3 lakhs and that under each of the other heads, about a lakh or less. The total expenditure was about Rs. 4 lakhs more than the budget anticipation. The increased revenue under the four heads to which I have referred helped to offset the deficiencies under other heads, the increased expenditure over the budget expectation, and the current and arrear losses of Rs. 7.73 lakhs on account of the operation of the Iron Works.

Review of the year 1925-26.

The budget estimate for the current year counted upon an aggregate revenue of Rs. 340.79 lakhs and provided for a programme of expenditure to be met from revenue, amounting to Rs. 340.05 akhs, leaving a surplus of Rs. 0.74 lakh. Accord-

ing to the revised estimate, the total revenue is Rs. 340 lakhs and the total expenditure chargeable to revenue is about the same and on the whole, the position of equilibrium anticipated in the budget will be maintained. There are, however, important departures from the budget for the current year which are explained in detail in the Financial Secretary's Memorandum already placed in your hands.

Forest shows an increase of Rs. 4 lakhs of which about Rs. 3 lakhs is from sandal oil. The demand for sandal oil was very brisk during the year, the quantity sold being the highest on record.

The revenue from Income and Miscellaneous Taxes is better by over Rs. 2 lakhs and this is chiefly the result of realization of arrears due from the Kolar Gold Mining Companies.

An increase of nearly Rs. 4 lakhs appears under Railways, and this is due to the improvement in traffic receipts on our lines worked by the Madras and Southern Mahratta Railway Company and to the refund of about three-quarters of a lakh on account of the customs duty which had been collected on materials used on the same lines.

There is a decline of Rs. 2.63 lakhs under Krishnarajasagara Hydro-Electric and Irrigation Works, due to a temporary relinquishment of power by the Kolar Gold Mining Companies.

The budget programme did not anticipate any loss on the operation of the Iron Works but owing to continued fall in prices, this expectation has not been realized. The revised estimate takes into calculation an adjustment, on this account, of about Rs. 8 lakhs, of which, a sum of nearly Rs. 3 lakhs is the loss for the half-year ended December 1925 and the balance of Rs. 5 lakhs represents preliminary expenses and arrear losses which could not, for want of funds, be written off in previous years.

Turning now to the expenditure side, it will be seen that noticeable increases occur under Interest, Civil Works and Agriculture.

The increased expenditure under Interest is the result of arrear claims to interest on State Loans and of larger balances of Savings Bank Deposits and Insurance Funds than had been estimated in the budget.

The increase under Civil Works is about Rs. 2.5 lakhs and this is mainly due to the expenditure on repairing the Madhavamantri Anicut and on the improvements to the Mysore City Water Supply Scheme.

An additional expenditure of nearly Rs. 2 lakhs was necessitated by measures adopted to combat cattle diseases and this explains the excess under Agriculture.

The only noticeable decrease is under Education and it amounts to about Rs. 2.5 lakhs contributed by savings under most of the minor heads and some lapses on grants are incidental to the nature and scale of operations of this Department.

As usual, the outlay on the Bhadra Irrigation Project is met from the Irrigation Capital Works Reserve, and the expenditure aggregating Rs. 4.33 lakhs on the following items, which are of a non-recurring character, is met from the Special Reserve :

	Rs.
Expenditure on Madhavamantri Anicut ..	60,000
Purchase of serum and cost of establishment for combating rinderpest	2,05,000
Flood damage works	1,68,000
Total ..	4,33,000

Budget Estimates for 1926-27.

I shall now proceed to explain to you the budget programme for the next year. The estimate of total revenue in that year is placed at Rs. 341 lakhs and that of expenditure at about Rs. 340.5 lakhs, resulting in an anticipated surplus of about half a lakh.

I should like to draw your attention to some features which characterize our sources of revenue. Some of the sources are on the decline, while the annual yield of others is subject to large fluctuations. The revenue from Excise is steadily on the down grade. As pointing to reduced consumption, the decline is, doubtless, a matter for satisfaction, but the reduction is a dislocating factor financially. Following the action taken by the Government of India, the Excise Duty on cotton manufactures which is now suspended, has to be remitted, and accordingly, no credit is taken for this item in the next year's estimates. This remission means an annual loss of revenue of nearly Rs. 2 lakhs. The surplus revenues of the Civil and Military Station payable to the State are also showing signs of contraction. The revenue from the sale of sandal oil is subject to wide variations depending upon market conditions. With the completion of the settlement operations, Land Revenue has practically reached its highest level for some years to come, besides being subject to variations due to seasonal vicissitudes.

There are not many revenue estimates for the next year to which I need draw any special attention. The Land Revenue is placed at a couple of lakhs higher than the revised estimate on account of the re-settlements coming into force from the next year. It is not safe to count upon the continuance of the record sale of sandal oil in the current year and this accounts for the decrease under Forest. Having regard to the trend in the last few years, the revenue from Excise is taken at a lakh and a half less than in the current year. The reduction under Income and Miscellaneous Taxes is accounted for by the abolition of the Excise Duty on cotton manufactures. The Kolar Gold Mining Companies are expected to consume more power than they did in the current year and accordingly, the estimate in the next year under the Krishnarajasagara Hydro-Electric and Irrigation Works is better than the revised estimate.

There has been a perceptible improvement in the operation account of the Bhadravati Iron Works in the second half of the current year, and in view of this, the Board of Management of the Works do not expect any loss on working in the next year. Accordingly, no current loss on account of these works has been provided for in the next year's estimates.

The aggregate expenditure for which provision is made in the budget is Rs. 349 lakhs and of this amount, it is proposed to meet from current revenues nearly Rs. 341 lakhs, leaving the balance of about Rs. 8 lakhs to be met from Reserve Funds.

A progressive administration needs expanding revenues to meet the increasing demands for expenditure but in view of what I have stated, our revenue position requires close and constant watching. Attempts have, I think, to be made to increase our revenues in order to be able to provide the funds necessary for various improvement measures. At present, our Rupee Debt amounts to Rs. 354.42 lakhs against which we will have set aside by 30th June 1926 a sum of Rs. 116 lakhs towards the Sinking Fund. The net Rupee Debt at present is therefore Rs. 238 lakhs only. We have to replace our short-term loans by a conversion loan of long currency and as the market rate of interest is showing a tendency to go down and long-term loans also are coming into favour, we may avail ourselves of the opportunity for conversion very soon. It is possible to spread the

present debt over a long period by floating a fresh loan bearing a much lower rate of interest. Even taking interest at 6 per cent (the actual rate will, in all likelihood, be much less) and Sinking Fund at 4 per cent, the yearly contribution required from the general revenues to wipe off this debt in 30 years will not exceed Rs. 18.5 lakhs. Instead of this, we are now setting aside annually a sum of Rs. 42.39 lakhs to meet the charges both for interest and Sinking Fund. Of this sum, it seems possible to divert over Rs. 20 lakhs towards making provision for new Capital Works such as, the High Level Canal about the starting of which every one is agreed, and for some of the nation building activities which are inadequately provided for at present. By encouraging such activities, we will be putting heart into the people and indirectly aiding the future growth of State Revenues.

The 7 per cent loan of 1921-22 amounting to Rs. 195.57 lakhs is repayable in 1931-32 when it is expected a sum of Rs. 29 lakhs will be released from the debt service. I think it necessary to anticipate the release of the greater portion of this sum by making arrangements for the conversion of the loan in good time or for raising a new long-term loan to repay the balance of the old loan.

Considered collectively, the State properties so far created are paying a reasonable return. The loan in question was raised to create new property although that particular property may not be paying so soon. After 8 or 10 years, the property in question may also begin to pay and when that time arrives, the general revenues may not have any debt charges to meet on its account.

You will agree it would not be right to make the present generation share all the burdens leaving to the next generation only the enjoyment of the benefits accruing from these works. We have to view the works as a whole. On this question, which is receiving the earnest consideration of His Highness' Government, your views and advice will be very welcome.

I may assure you that His Highness' Government are most anxious to find funds from some source or other to help the people in their economic activities and social betterment. Pending arrangements for releasing some of the funds at present devoted to debt charges, we have decided, as remarked already, to make a sum of Rs. 8 lakhs available at once for this purpose and to meet the same for the present from Reserve Funds. The following are the principal measures for which additional grants are included in the next year's budget: -

1. A grant of Rs. 1,20,000 is made for meeting part of the subventions promised to the Bangalore City Municipality for the improvement of its Water Works.

2. An allotment of Rs. 3,00,000 is included for carrying out the second instalment of improvements to the Water Works of the Mysore City.

3. For the additional requirements of the Education Department, a lump sum provision of Rs. 50,000 is made.

4. The present scale of pay of Sub-Assistant Surgeons has for a long time been represented to be inadequate and a resolution was also moved and carried some-time back in the Legislative Council recommending an increase of pay to these officials. A provision of Rs. 16,000 is made for giving effect to this resolution.

5. The present scale of pay of the several units of the Army is low and it has been found difficult to attract recruits of the proper type. Some improvement of the scale is a pressing measure and a provision of Rs. 50,000 for the Army and a similar amount for the Palace Military are accordingly included in the budget.

6. A proposal is under consideration for installing a plant for creosoting timber sleepers under the supervision of the Forest Department by making use of the tar to be supplied by the Bhadravati Iron Works. A sum of Rs. 85,000 is included in the budget for this purpose.

7. A provision of Rs. 1,30,000 is made for improving the sanitary condition of towns, other than Mysore and Bangalore, for which there is a crying need.

8. Attention to sanitary improvements of the villages is another urgent need and a provision of Rs. 1,30,000 is accordingly made under rural reconstruction.

9. Measures of economic development have not been actively pursued for some time past; a provision of Rs. 1,00,000 is made for making a beginning towards the resumption of these activities.

10. An allotment of Rs. 1,20,000 is made for Malnad Improvements, and the usual provision for opening new dispensaries in the Medical and Veterinary Departments is included in this provision.

Expenditure met from Reserves.

The outlay on the Bhadra Project is met from the Irrigation Capital Reserve. The combined grant for the Water Works of the Bangalore and Mysore City Municipalities amounts to Rs. 4.25 lakhs and in view of this fact and also of the non-recurring character of this charge it is proposed to provide for it from the Special Reserve to the extent permitted by the balance of this reserve. The amount at credit of the Famine Insurance Fund will be Rs. 63 lakhs at the beginning of next year and it is proposed to utilize a part of the interest realized on the investments held on behalf of this fund for original irrigation works and the restoration of minor tanks as the expenditure on these works will, in effect, be a form of insurance against famine. The total expenditure to be met from these three reserves amounts to about Rs. 8 lakhs.

Capital Works.

The programme of Capital Works for next year provides for a grant of nearly Rs. 50 lakhs. The bulk of this provision is for the Seventh Installation Works of the Electrical Department which are in full swing. A sum of Rs. 10.5 lakhs is provided for the Krishnarajasagara Dam and a similar amount for the open line requirements of Railways worked by Government and by the Madras and Southern Mahratta Railway Company.

Administrative Record.

I will now refer to some of the salient features in regard to the administration since you last met in Session.

Revenue Department.

The seasonal conditions during the year were generally favourable all over the State except in parts of the Tumkur and Kolar Districts. Relief measures were continued in these tracts and a sum of Rs. 74,200 was spent for takkavi loans, gratuitous relief and towards tank maintenance and other improvement works.

The whole question of suspension and remission of wet assessment on tank irrigated lands was carefully examined by Government, and revised rules regulating the grant of remissions were issued in October 1925. In accordance with these rules, remissions to the extent of Rs. 99,462 were sanctioned during the year.

A little over Rs. 90,000 was also sanctioned for restoration work in the districts affected by the floods of 1924–25. I should not omit to mention the commendable work done by the Central Flood Relief Committee in this connection. The special thanks of Government are due to the non-official members of the Committee who so willingly co-operated with Government in bringing prompt relief to the sufferers. The Committee has finished its labours and the question of how best to utilize the unspent balance of Rs. 55,000 at the disposal of the Committee is under consideration.

Agricultural Department.

The Coffee Cess Bill having been passed into law, rules for the levy, collection and administration of the cess were issued. Work on the Coffee Experimental Station at Balehonnur is making satisfactory progress.

I have already referred to the special grant sanctioned for the purchase of serum for inoculating cattle against rinderpest which broke out in a severe form in several parts of the State during the year. Government have under contemplation the question of manufacturing the serum locally.

Water-supply to Cities and Towns.

Schemes for the improvement of the Bangalore, Mysore and Shimoga Water-supply were sanctioned during the year. A Committee with Sir M. Visvesvaraya as Chairman, has been constituted to investigate thoroughly the question of Bangalore Water-supply and to suggest measures for its permanent improvement. Government have also kept in view the question of improving the water-supply in other important towns in the State. During the year, schemes for the supply of water to Kalasa, Mudigere and Chitaldrug were sanctioned, and similar projects for Dodballapur, Tarikere, Yedatore, Whitefield and Malvalli are receiving attention.

Education.

The budget grant for the Education Department was Rs. 18.30 lakhs, of which, a sum of Rs. 8.66 lakhs represents the allotment from local cess and contributions from local bodies. In order to meet the growing demand for high school education, two High Schools were opened at Nanjangud and Tirthahalli, besides additional sections in several of the existing High Schools. Some more High Schools will be needed, but the work of expansion has necessarily to be adjusted to the funds available. The S.S.L.C. syllabus was completely revised and introduced into all the High Schools. Provision for the teaching of vocational courses and commercial subjects was also made in several of the High Schools. The Mysore District Board has agreed to the levy of education cess during the year and including this district, six out of the eight districts are now levying the cess. The total amounts sanctioned from cess funds from the beginning till now cover an annual recurring expenditure of Rs. 2.60 lakhs, and with this sum, it has been possible to convert 52 Incomplete Middle Schools into Middle Schools of the new type, 72 Primary Schools into Incomplete Middle Schools, to open 156 Primary Schools and convert 763 Aided schools into Government institutions. The Adi Karnataka Boarding Home at Bangalore was expanded so as to provide for 80 students at an additional cost of Rs. 9,000.

Mysore University.

The problems connected with University education in India have entered on a new phase, and Mysore has shared in the general movement. These problems may be summed up under two main heads, those relating to constitutional type, and those relating to the organization of faculties and courses of study. Under the first, the movement has been generally towards the federal teaching type with constituent or incorporated colleges in one or more University centres, and under the second, towards original developments which adapt the University courses and faculties to the resources and capabilities of the country and the people.

The University of Mysore has been steadily following this two-fold path ever since its inception. Recently, the University has added a Medical Faculty and a Medical College with a Degree as well as a Diploma Examination, a department of teaching in the University College of Arts at Mysore, a department of Electrical Engineering in the University College of Engineering at Bangalore, and certain important and much needed extensions of the science installations in the University College of Science at Bangalore. Under humanistic studies, the transfer of the Archaeological Department to this University has helped to link up archaeological and epigraphic studies with the courses of history, and that to give a truly regional bent to our historical studies. Besides, scholars have been sent abroad, in view of the urgent need for new courses for Applied Science and Technology in one direction and Indology and Culture History in another. New Mathematical and Statistical courses have been started in connection with the departments of Mathematics and Experimental Psychology, which will place their studies on a concrete realistic footing.

I will not go further into these technical matters, but so much is necessary to draw public attention to the kind of pioneer work which Mysore has recently attempted in the field of University education. A great deal of reorganization work has been already accomplished. And this House will be interested in learning that, with a sound economy in administration, it has been possible to finance all these new developments, both extensive and intensive in character, with practically the same amount of State grant as was enjoyed by the University some five years ago, *viz*, seven lakhs of rupees more or less.

All these developments have been now brought to a head in the scheme of University Reorganization which has been passed by the Senate after prolonged and mature deliberation, and placed before the Government. The two fundamental points in that scheme are the institution of Intermediate Colleges and Intermediate Courses in place of the existing Entrance Section, and the opening out of various technological Diploma Courses for imparting a practical scientific training in various industrial and agricultural pursuits for which facilities and resources exist in the State.

The Entrance Course marks no definite stage in the educational curriculum. The students who go through the course of nine months and drop off do not advance much beyond the secondary stage; even those who pass are not recognized for purposes of admission to professional courses or general graduate courses outside the State.

The Intermediate Courses, as planned by the University, will postpone the dropping off of students by a year and provide alternative groups to about 2,000 to 2,500 students, suited to their aptitudes and interests. This, it is expected, will open to our young men a wider range of training in technological and professional colleges as well as in the form of post-intermediate diploma courses, and thus help ultimately

to establish a variety of agricultural and industrial occupations in the country. Such are the aims of the extended and diversified Intermediate Course approved by the Senate and placed before the Government. It is calculated to retrieve University Education from its present parlous state, and will go far to relieve the congestion in the channels of pure letters and pure science which swells the ranks of the unemployed with resulting social and economic disorder.

These Diploma Courses are contemplated for several branches of Applied Science and Technology, including Chemical and Engineering Technology, Applied Chemistry and Agriculture. They will extend over a year or 18 months after the completion of the Preparatory Intermediate Course: lectures and laboratory work will be provided in the University Colleges of Science and Engineering, and practical training in the workshops, factories and farms.

The Senate is of the opinion that the entire expenditure on the Reorganization Scheme as passed by them can be spread over a number of years. The full scheme as given will come into operation in the fifth year after the starting of the Intermediate Colleges, and the proposal of the Senate is to open the Junior Intermediate Classes in July 1927. Government have decided to accept this recommendation of the Senate. But it will be possible to give effect to the scheme in successive parts and in selected branches of study, if desired, and also to graduate its working according to the resources that may be available to the State.

Krishnarajasagara.

Coming to Capital Works, I have to state that the work of raising the Krishnarajasagara Dam to its full contemplated level of 130 feet is progressing satisfactorily. The supplies available at the present storage level of 106 feet are sufficient for irrigating a little over 60,000 acres as against a total of 120,000 acres when the storage is increased to 124 feet. The question of developing irrigation in the Cauvery Valley is receiving attention, and detailed plans and estimates for the excavation of the High Level Canal at an estimated cost of Rs. 250 lakhs are under examination.

Railways

I have already referred to the improvement in the revenue earnings of the Railways. Attempts by the Department to reduce the working expenses have been successful, so that the ratio of working expenses to gross receipts during the year will be about 67.5, which compares very favourably with the ratio in the previous three years. The Nanjangud-Chamrajnagar Railway construction which was started during the year is nearing completion, and conditions being favourable, the line should be open for traffic by the end of July next. Government have decided to follow the policy adopted by the Government of India, on the recommendation of the Ackworth Committee, in regard to the financing of District Board Railways, and have sanctioned the Kadur-Chikmagalur Railway on the understanding that Government will provide the funds for the construction of the line, and the District Board will guarantee the Government against losses in working. The construction of this line will be commenced as soon as possible. The resumption of work on the Shimoga-Arasalu line, which involves the construction of a new bridge over the Tunga river, is also under contemplation. The construction of other lines, for which there is equally strong demand, can only be considered when our financial resources permit. As a result of the reduction in the working expenses, it may be possible to give some relief to third class passengers. Government are looking into the matter, and hope shortly to pass orders reducing the third class fares.

Irrigation.

Among the larger irrigation works under progress, the head works and the first 16½ miles of the Right Bank Channel of the Bhadra Anicut have been completed, and His Highness the Maharaja was graciously pleased to open the anicut on the 12th instant. About 4,000 acres of land will be brought immediately under irrigation. The Sowlanga tank work has been completed and the excavation of the High Level Canal is in progress, 3 miles of the channel having been completed and water allowed for irrigation. Repairs to the bridge across the Tungabhadra at Harihar, which was damaged during the floods in 1924-25, is nearing completion and will be open to traffic shortly. With a view to ensure more efficient and quicker methods of restoration of tanks, a Tank Survey Division has been recently constituted to collect necessary data and prepare a suitable programme of restoration and improvement work. Among other important original works, I may mention the construction of a bridge across the Cauvery and the Kabbani near T.-Narsipur and the construction of a reservoir across the Kumudvati near Anjanapur. Both these projects have been investigated, and Government propose to undertake them as soon as possible.

Electrical Department.

In regard to the activities of the Electrical Department, I may mention that during the first 10 months of the year, there were 11 additions to power installations, and 600 to lighting installations, bringing the total number of these installations up to date to 299 and 8,904 respectively. The work connected with the Seventh Installation which is expected to generate additional energy to the extent of 14,000 H.P. is in full swing. Orders for almost all the machinery required have been placed through the Stores Purchase Committee, and the construction of buildings is well in progress. The Bangalore Transmission Lines have been thoroughly remodelled and service rendered more efficient. The question of extending power supplies to important towns along the main transmission system such as, Bowringpet, Yelahanka, Kankanhalli, etc., is receiving attention, as also the question of making electric power available at cheap rates to raiyats willing to instal pumping plants on the banks of the Arkavati for irrigation purposes. The rate for power charged to small industrial concerns has been reduced from two annas to 1¼ annas for consumption up to and including 20 H.P. The Government have lately ordered that no meter hire be levied where the power consumed is 6 points or less per month. These reductions will, it is hoped, secure to the small consumers the much-needed relief they have been praying for.

Bhadravati Iron Works.

In the early part of the year 1925-26, the output of pig iron and by-products was affected by monsoon conditions and the prices underwent a rapid decline. Towards October, the losses rose to serious proportions and the situation called for special measures. The loss on operation during the half-year ended 31st December 1925 amounted to Rs. 1,88,827, and that due to the fall in the value of the stock on account of rapid decline in prices to Rs. 1,04,386 more, making a total loss of Rs. 2,93,213 for the half-year. During the current

half-year, the working has improved and it is not expected that there will be any appreciable loss. Since October last, drastic economies have been effected in all sections and special steps taken to improve the output. The cost of collection of raw materials was considerably reduced and the output of the furnace raised to its full estimated capacity. The various measures of improvement and cost reduction took some time to yield the full results. For a period of six months from November 1925 to April 1926, the entire staff of the Works agreed to forego a share of their emoluments ranging from 6¼ to 10 per cent. The spirit of self-sacrifice displayed by them deserves special recognition.

During the next year, *i.e.*, 1926-27, the three subsidiary plants, the Pipe Foundry, the Alcohol Recovery Plant and the Tar Distillation Plant, are expected to be in full operation and to yield additional revenue. The operations of the main plant will probably be maintained at its present level and it is not likely there will be any loss even if the present low market rates continue. Almost the entire current output was sold during the first half-year and a similar result is anticipated during the second half-year.

The Board of Management have recently issued a statement which gives a clear account of the present situation. I visited Bhadravati recently and found that steady progress is being made in every direction. The situation of the iron industry all the world over has been very unsatisfactory of late and our Works are in no worse position than similar concerns elsewhere. The following extract from a special review of the Iron and Steel Trades in Great Britain in 1925 published by Messrs. Wm. Jacks & Co., of London, will probably be of special value in this connection :-

"By long years of a depression unprecedented in modern industrial history, the vitality of the British Iron and Steel trade has been reduced to a low ebb. The liquid assets and cash reserves of even the most powerful of the great iron and steel combines have been exhausted, not only have no dividends been earned but heavy losses have been incurred; yet in spite of all the sacrifices, production has still further declined during the past year. Such plant as has been operated has only been kept going at a loss. The plight of the iron and steel industry is now recognized as a matter for grave national concern."

While such is the experience in the most advanced industrial country in the world, there is every reason to be satisfied with the progress made in the working of this new undertaking during the difficult time through which it is passing. The full benefit of this progress will be visible when the world conditions improve and there is a substantial recovery in the iron and steel trades.

Administrative Efficiency.

Gentlemen, this is necessarily a hurried review of the position of the administration in the principal Departments. I realize, as well as anybody, that the machinery of administration needs some repairs and readjustments here and there. Scriptory work must be cut down, and real constructive work must be increased in all public offices. I have every assurance that the officers of the Government will co-operate wholeheartedly in reducing unnecessary correspondence and in getting things done by prompt personal attention. It is generally complained that we Indians have yet to earn a name for businesslike habits and expeditious disposal of papers. If the officers of the several departments, in all the various grades, will remember this and put forward greater diligence in attending to their routine work, not only will much be gained thereby for our general reputation, as well as for the advantage of the public, but much relief will also be afforded to the Government so that they could apply themselves with a freer mind to the larger questions confronting them.

Some Large Questions.

How these questions are growing both in number and complexity must indeed be patent to every one. With each year, our responsibilities have been widening, and not the least important of them are our moral responsibilities as a modern and progressive Indian State. A large and eager world is watching our work here, looking for encouragement or warning, according as we do well or ill. Far wider interests than those of Mysore are involved in the sort of reputation that we succeed in winning here. We have to exert ourselves to the utmost in every direction in order to maintain the good name of our State, to raise its prestige abroad, and to add to its renown as a friend of all progressive movements. Before long, the question of devising a mode of fitting in Mysore, among the Indian States, in the general scheme of Indian Government will have to be considered; and as connected with it, there is the question of securing satisfactory arrangements for the fair treatment of Mysore in her external concerns. This is not the occasion for me to go into the details of these questions, and I mention them here only to indicate the magnitude of the task that lies before us.

Conclusion

In conclusion, I cannot but address to you a few words more personal in subject and feeling.

I am grateful to His Highness for the opportunity now afforded me of rendering wider service to him and to his people. I regard the office of Dewan less as an appointment than as a great mission of patriotic service. To His Highness, I am bound by gratitude and life-long affection. His approval of such service as I may render the State is of paramount worth to me, and it can be secured only by patient labour for the prosperity and the happiness of the people of Mysore. I assure you, gentlemen, that the labour shall not be lacking on my part, nor the sympathy that alone can give it the right direction; and I pray also for the clear and unvarying vision through which, despite human weakness and the intractability of human affairs, the ideal has power to dominate the smallest deeds of men. One might well be daunted by a sense of the responsibilities of the office and of one's own limitations. But this is no individual effort. Without your sympathy and support, gentlemen, individual effort would be futile, but working together, we cannot fail. I have perfect confidence that we shall thus work together. This confidence is based partly upon the obviously sincere and earnest expressions of good wishes which I have received from representatives of all classes among you, but its essential foundation is my knowledge of your patriotism and of my own.

We deliberate amidst many difficulties, but these merely accentuate the greatness of our opportunity. We have a fortunate State, fortunate in the nobility and wisdom of its Ruler, in the character and homogeneity of its people, in its vast mineral and other resources, almost untouched, but ours to develop. Few lands are so ready to respond to effort, if the effort be wise and strong and steady and united.

Gentlemen, my thoughts look forward, not without anxiety, yet with hope and resolution, to the day when I shall lay down this office and render my account. We stand or fall together, you and I. We are one in duty and in aim. I trust we shall also be one in judgment. I find it impossible even in thought to make a separation between us, except for one tremendous difference. For a few brief years, the Dewan plans and labours, and then his place knows him no more; he passes and his work is judged. Your office as representatives of the people is for ever. Individuals may come and go, but the work of this Assembly will continue steadily through time beyond our foresight. In these its earliest years, it is you, individually and collectively, who are creating its traditions. How important is it, then, to maintain an absolute purity and nobility of policy and word! And in State affairs, purity and nobility simply mean the disinterestedness of persons and party, creating unity and power. Let us by mutual friendliness and good understanding see that the ancient vision of a united national life is restored in its fulness. I feel that anyone amongst us, including myself, who sought to use this Assembly for purposes narrower than the universal service of the State, would thus dishonour his office. If we, as a State, are to achieve real progress and to win the regard and the approbation of the outside world, it is necessary that we should always look at things from a national standpoint and deal with the problems that face us, and some that distress us to-day, on lines of co-operation, co-partnership and mutual good-will.

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By G. F. Towers, Inspector, Foreign Department, The Royal Bank of Canada 285

TUBE WELLS IN BANGALORE—
By C. Hayavadana Rao, B.A., B.L., Municipal Councillor, Bangalore City 288

AGRICULTURE IN BOMBAY, 1924-25.. 290

INDUSTRIES OF BENGAL, 1925 .. 293

PROTECTION FOR INDIAN GLASS INDUSTRY—
By the "Bystander" 294

INDIAN ECONOMIC ENQUIRY REPORT—
By the Editor 297

THE CANADIAN PLAN OF ORGANIZATION OF GOVERNMENT STATISTICS—
By R. H. Coats, Dominion Statistician of Canada 298

CO-OPERATION IN INDIA AND ABROAD
By Christopher Hay, M.A. .. 301

PAGE

ECONOMIC NOTES FROM LONDON .. 303

ECONOMICS IN THE WEST.. .. 306

LEAGUE OF NATIONS 310

CANADIAN TRADE AND FINANCE .. 311

SESQUI-CENTENNIAL EXPOSITION .. 316

INDIAN ECONOMIC NOTES .. 320

TOPICS IN THE JOURNALS .. 322

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The Rates of Food Consumption by Zamindars 326

The Economic Value of Goats in the Punjab 327

Aims and Methods of Education in India 327

A Cotton and Exchange Chart .. 327

MISCELLANEOUS NOTES—

Nagina's Chief Industry 284

Brown and Pressed Glass 300

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The World's Greatest Power Station.

By H. J. Shepstone, F.R.G.S.

We hear to-day a lot about the need of cheap power and the blessings of electricity. At no place in the world are such magnificent power stations to be seen as at Niagara. At the Falls themselves there are five, two on the American side of the river and three on Canadian territory.

The average drop of water at the Falls, under which the turbines which produce the electrical energy are driven, is about 150 feet, and about sixteen horse-power is derived from every cubic foot of water passing through the machines. But after passing over the Falls the water rushes down over cataracts and rapids into Lake Ontario, dropping over another 150 feet in a comparatively short distance. Now from a 300-foot drop, double the power can be obtained than from a fall of 150 feet.

By international agreement the amount of water which may be taken from the Falls for electrical energy is limited, and it was because of this fact that the Hydro-Electric Power Commission of Ontario, who control the three stations on the Canadian side of the river, decided to take advantage of the greater drop of water when they set out eight years ago to build their new power-station, which has only just been completed and where energy representing 600,000 horse-power is now being generated.

It meant, of course, the harnessing of the Falls, in a new way. The Niagara River was tapped just above the Falls at Chippawa, at the mouth of the Welland River. The flow of this stream was reversed by means of extensive dredging for four and a half miles as far as Montrose. From this point a canal was built around the Falls for a distance of nearly nine miles to Queenston, on the lower Niagara Gorge. Here, on the water's edge, the power-station was built and the turbines are driven by water falling from a height of 300 feet.

It proved a daring piece of engineering work and from first to last over £8,000,000 was expended upon the enterprize. Indeed, more automatic and mechanical machinery were requisitioned in this single undertaking than upon any other work since the digging of the Panama Canal. The giant steam shovels used for excavating the canal were the largest ever made. They weighed from 350 to 400 tons apiece. Standing on the floor of the ditch they sunk their mouths into the earth, grabbing eight cubic yards of it, at a single chew, which they deposited into railway trucks standing on the embankment seventy feet above. With such a tool the cellar of an ordinary house could be dug in four minutes.

The whole of the canal floor and sides are lined with concrete and through this artificially-made channel the water is led to a fore-bay, or reservoir. Here it passes through a screen-house, an ingenious device for keeping out ice. Emerging, it disappears in penstock laid in channels in the cliff fence. They lead the water down the cliff for a distance of 300 feet into power house built on the water's edge. The falling columns of water strike the vanes of the turbines and thus cause them to revolve. They, in turn, set shafts in motion, reaching up to the generators above which operate the dynamos and thus produce the electrical energy. After fulfilling its purpose the water passes beneath the power-station into the river.

The turbines, of which there are ten, each capable of producing 60,000 horse-power, are the largest ever constructed. But everything in this new power-station is on the same colossal scale. The generators turn the scale at 690 tons apiece, their heaviest single parts scaling 300 tons. One of the problems was how to cool these immense machines. This is accomplished by passing cold air through them and the quantity required may be gauged when it is stated that every 2½ hours the amount of air passing through a single generator equals its own weight, namely, 690 tons!

To produce this output of 600,000 horse-power some 15,000 cubic feet of water is drawn every second from the Niagara River just above the Falls. It may be said to have reduced the flow over the Falls by about an inch! This may seem a very infinitesimal amount, but it is nevertheless a fact that under the present treaty Canada has virtually taken her allotted allowance of water from mighty Niagara. But from these Falls she is now obtaining a million horse-power, and to obtain the same amount of energy from coal would mean the consumption of twenty million tons of this commodity a year. By means of transmitting lines the coveted power is carried to cities two hundred, three hundred, four hundred and more miles away and used for driving trams, lighting streets and houses, and running machinery in a host of factories and workshops.

Belgium—An Industrial World Power.

By Henri Jaspar.

Belgian industry presents three important and distinctive characteristics.

In the first place, in no country in the world has industry an equal importance, in respect to the economic life of the nation, to that which it possesses in Belgium. More than half of the population derives its livelihood from it. Of the 7,400,000 inhabitants, more than 1,700,000 able-bodied workmen are directly engaged in industrial pursuits, either as employers, as operatives or as labourers.

A second noteworthy characteristic of Belgian industry is its dependence on foreign countries. This dependence manifests itself in two ways: On the one hand, with respect to obtaining supplies of raw materials; on the other hand, in connection with the marketing of the country's products.

At the time when intensive industrial development first began in Belgium, about a hundred years ago, there were to be found within the country itself, besides coal, most of the raw materials which were required—iron ore, zinc ore, etc. To-day its mineral resources are entirely exhausted and even the deposits of coal are showing signs of exhaustion. This latter fact is manifested by the progressive diminution of the production per miner. In the United States the output for each miner amounts to nearly four tons per day, whereas in Belgium it barely exceeds half a ton. Already the national production falls short of the consumption by nearly one-sixth.

All the important raw materials used in Belgian industry to-day must, in consequence, be purchased abroad and transported for long distances at great expense. This is the case with all the iron, manganese, lead, zinc and copper ores and with the raw materials for the textile industries, such as wool, cotton and jute; with hides and skins, mineral oils, oil-bearing seeds and fruits, fertilizers and various mineral products, such as nitrate of soda, phosphate of lime, sulphur, etc. The imports of these materials represented in 1913 a value of more than 1,700,000,000 gold francs, or nearly half of the total imports.

Belgian industry is equally dependent on foreign markets for the sale of its products. In the case of several important lines of manufacture the domestic market absorbs only a small part of the production. The glass industry, for example, must export on an average, in normal times, 95 per cent of its output; the zinc industry, 80 per cent; the flax-spinning industry, 80 per cent; the goblet, cut-glass and bottle industries, 70 per cent; the steel industry, 66 per cent; the match industry, 64 per cent, etc.

The third characteristic of Belgian industry is connected with those just mentioned. It must, by its exportations, pay for the raw materials that are lacking and the foodstuffs which Belgium does not produce to sufficient quantities to feed its people. Belgium, as is well known, has a density of population that is not equalled in any other country in the

world. It has 258 inhabitants per square kilometer, as compared with 12 in the United States. Its fields produce only a small part of the foodstuffs which its people consume—barely a fourth, for example, in the case of wheat. The imports of foodstuffs—wheat, flour, meat, dairy products, eggs, fish, vegetables, etc.—represented in 1913 a value of 861,000,000 francs, or one-fourth of the total imports.

It follows from this situation that the exportation, on a large scale, of its products is for the industry of Belgium a vital necessity.

Among the industries of Belgium, which occupy the foremost rank with respect to exports are the metal trades, the manufacture of textiles and glass making. These three groups of industries alone sent abroad more than 50 per cent of our total exports of manufactured products, amounting in 1913 to a value of a billion gold francs. There must be added to these since the War the chemical industry, as well as other branches of minor importance, such as the manufacture of paper, cement, furniture, rubber, etc.

Since the Armistice, industrial activity in Belgium has passed through three distinct phases. The first extended from the end of 1918 to the autumn of 1920: it was the period of reconstruction. The damage effected by the Germans (which in several important industries, such as the steel trade, practically amounted to total destruction) presented a formidable task to the leaders of industry. Factories had to be rebuilt, the mechanical equipment replaced, the commercial organization of the industries readjusted and new conditions of employment established for the operatives.

This complex task had barely been accomplished when, in the fall of 1920, the world-wide commercial crisis took place, causing a slowing down of production. This was the second phase.

Finally, since the autumn of 1921, a steady improvement in the situation has taken place. This was the third phase. In this third period the condition of Belgian industry was no longer the same as in 1914. The factories which had been damaged or destroyed were not merely rebuilt; in most cases their equipment was improved and their capacity considerably enlarged. This was the case in the steel industry, the machinery industry, the textile industry, the glass industry, the cement industry, etc. Belgian industry thus found itself in a position to produce more and to produce better than before, but at the same time it found itself confronted by serious difficulties the like of which it had never known before.

What contributed most to the prosperity of Belgium in the past was its low cost of production. The cost of production was low because the taxes of the country were moderate, the cost of living was cheap, wages were low, the working people were accustomed to intense application during long hours of labour, the necessary supplies of raw materials and of fuel were obtainable at low prices and under favourable conditions and the cost of transportation was light.

The war put an end to these advantages. It literally reversed the conditions of production in Belgium. Fiscal charges were formerly light; they have now become crushing. The total expenses of the Government are to-day eight and a half times what they were before the war. Among these expenses those due to social conditions have increased the most; these are at present nineteen times what they were in 1914. This situation resulted from the terrible misery which existed in Belgium during the war. During a period of almost four years 95 per cent of the working people of Belgium were idle and the greater part of the population of the country subsisted through relief organizations. Many of the expenses dating from this period have become permanent; old age pensions, relief for unemployment, employment bureaus, the control of child labour, etc. The grand total of expenses of this general description aggregated more than half a billion francs, or a sum larger than that attained by corresponding appropriations in France whose population is five times as great as that of Belgium and whose territory is eighteen times as large. These expenses have necessitated a final burden without parallel in any country. Taxes have increased five-fold, as compared with 1914, and six and a half times in the case of direct taxes. In spite of this effort Belgium is confronted with a budgetary deficit and new taxes must soon be levied.

Belgium was formerly a country where the cost of living was cheap. It is to-day, with the exception of the countries where exchange has been completely demoralized, the country where the cost of living has shown the greatest increase. If we compare the sums spent for the same commodities at Paris and at Brussels, we find that what cost 100 in 1921 now costs 411 at Brussels and 321 at Paris.

Wages were low before the War. The increases that have taken place since then have more than offset the rise in the cost of living. Wages are at present at four or five times what they were in 1914. The workers were then but partially organized. Powerful unions have been formed that now include 90 per cent of the operatives within their ranks. These unions are disciplined; their members faithfully obey the orders of their leaders. As a result of their strength they have obtained notable improvements in working and living conditions and it has been the cost of production that has borne the bulk of the added expense.

The working day was formerly long; in several industries amounting to ten, eleven and even twelve hours. At present it in no case exceeds eight hours. The objectives which were sought at the conference at Washington in 1919 have been attained in Belgium, through a law which reproduces them faithfully and which is strictly enforced.

The depreciation in the value of its currency has by no means brought to Belgium the advantages that it has to other countries. The necessity of obtaining in the United States and other countries, where the rate of exchange is high, the greater part of the foodstuffs and raw materials that it requires —a situation due to Belgium's small area, the density of its population and the inadequacy of its natural resources— has resulted in making these purchases exceedingly burdensome.

Through the single factor of the present position of the dollar these prices, expressed in Belgian francs, are from three to four times what they were in 1914. It is this state of affairs which partially explains why the cost of living has increased more in Belgium than in any other country. It may be said that the depreciation in the Belgian franc is reflected automatically and almost immediately by a corresponding increase in the cost of production.

Finally, there is still another difficulty under which Belgian industry is labouring. On every side protective tariff barriers are being erected. The foreign outlets for the products of its industry, which are a vital necessity to Belgium, are contracting more and more.

In spite of all these difficulties, Belgian industry continues vigorously and with confidence to exert every effort to maintain itself. The signs of a revival of economic activity, which have been evident for more than a year, are becoming stronger every day. In the metal trades, for example, the production, as compared with 1914, has increased from 19½ per cent in 1921 to 78.8 per cent at present for pig iron, from 12.1 per cent in 1921 to 97.1 per cent for finished steel, and from 23.4 per cent to 56.9 per cent for zinc. In the textile group we can note the same tendencies. In 1921 the output amounted to nearly 33 per cent of what it was in 1913, whereas at present it exceeds 80 per cent. In certain branches of this industry this rate of progress has been greatly exceeded.

The reports regarding unemployment are equally encouraging. Whereas the proportion of unemployed in May 1921 was between 32 and 33 per cent, it had declined by last September to 3.8 per cent.

These evidences of improvement are taken in conjunction with others, such as the growth in the movement of shipping at the port of Antwerp, which is at present greater than it was in 1914.

Belgium desires most earnestly that its friends in all parts of the world should understand the difficulties with which it was, and still is, confronted as a result of the war and the efforts it has made, and is making, to overcome them. It is ready to produce, in friendly competition, all and more than they bought from it in former times. It hopes to maintain and expand the business relations which it has with them and which are an indispensable factor for its economic existence. All that it wishes is to live by its industry. It is a good customer of many countries outside Europe, and has lately greatly increased its purchases in that market. It is essential that in exchange, it be able to sell to all countries of the world the products in which it specializes.

Nagina's Chief Industry.

The chief centre of the glass industry is at Nagina, where flasks for carrying Ganges water and similar articles are manufactured. Small medicine and perfume bottles are also blown from white glass, the material used consisting of broken glass. There are other places in the U. P. where this industry is carried on. The condition of the industry has been stationary

Progress in Canada: An Object Lesson to India.

By G. F. Towers,
Inspector, Foreign Department, The Royal Bank of Canada.

A short time ago when the American Physical Society met in Montreal, I was present at a dinner that was given in their honour. One of the Canadian speakers, in emphasizing the peaceful and cordial relations of our two countries during the last hundred years, made frequent reference to the boundary line between them. I was much struck with the simple reply of the distinguished scientist who headed the American Physical Society. "As a scientist," he said, "I do not understand the speaker's reference to boundary lines. For science there are no such things." For a business man, however, this simple attitude is not possible. The scientific partnership is full and free—the business partnership is bound to be subject to certain qualifications.

The relationship between the United States and Canada has been so close and is of such long standing that it is not an easy thing to tell people in this country something about Canada which they do not already know. However, as a preliminary I must give you a very short sketch of Canadian development during the last twenty-five years. The years from 1900 to the outbreak of the war were ones of rapid growth. This was a period during which the population of the Old World was steadily increasing and with that increase came a growing demand for raw materials and foodstuffs which Canada was in a good position to supply. Canada's credit was good, foreign capital was available and immigrants came to us in large numbers, not only from Europe, but from the United States, whose farmers, in many cases, took advantage of the opportunity to sell their relatively high priced properties and locate on the cheap and fertile lands of Western Canada. Canada's products and Canada's population increased with great rapidity. While the War effected a complete change in so far as the movement of foreign capital and foreign labour was concerned, it did not bring a reverse to Canadian business—on the contrary our products were more than ever in demand, and in spite of the withdrawal of over half a million men for the Army, both agricultural and manufacturing production were enlarged owing to the stimulus of high prices, and the War years were ones of great prosperity. The deflation period, which commenced in the year 1920, was a difficult time for Canada. For one thing, the prolonged depression in agricultural prices, particularly wheat, was a most unfavourable factor, in view of the great importance of agriculture in our business organization; for another, the burden of Public Debt was heavy and thirdly, the pre-war expansion period had left us with railroad systems too large for our requirements. Had the War not come when it did, the country's population might soon have grown up to the railway facilities, but as matters stand, this has not yet been accomplished. The year 1925, however, indicated that only moderate progress is required to relieve the Government of the necessity of fresh annual advances to the National Railways, the amount given by the Government in 1925 being reduced to 10 million dollars. The net result, however, of the conditions which prevailed until comparatively recently was that business in Canada, as a whole, was below normal. There were many favourable developments during the period from 1920–21, such as, for example, the growth of the pulp and paper industry, the enlargement in mining operations and progress in water-power development, but it required the bountiful crops of 1925 and the favourable prices which were received for agricultural products to really usher in good times. As an example of what Canada has accomplished from 1900–25, it should be pointed out that during this period annual imports have increased from a value of 272 million to 900 million dollars a year while exports have increased from 183 million to more than one billion, three hundred million dollars a year. Agricultural production in 1900 had a value of 350 million; present production is estimated at about one and three-quarter billion dollars. Mineral production has greatly increased in value and the opening of new gold areas is expected to result in our becoming the second gold producing country in the world. In 1900 we had an installed electric turbine capacity of 150,000 h.p. To-day we have more than 4 million. More than 700,000 h.p. was added to Canadian turbine installation in 1925. Canadian manufactured products now have an annual value

of two and a half billion dollars, as against a total of only 500 million in 1900.

The above has had reference entirely to the past. What of the future ? In considering the future, we cannot draw much consolation from it for Canada if we assume that world trade reached its zenith in 1914, that the age of progress and invention is past or that Europe is played out, but if, on the other hand, we work on the more reasonable assumption that the gradual solution of post-war problems and the stabilization of currencies will give Europe an opportunity, not only to restore the pre-war standard of living, but gradually to progress, and if we can assume in addition that the Orient will play an increasingly important part in the world's trade, than we may feel sure that the commodities which Canada can produce will be required by the world in increasing quantities.

Now here is where I want to tie up my remarks with Canada's relation to the United States. It may not be inappropriate to quote the closing sentences of an article recently written by the General Manager of the Royal Bank of Canada for an American publication. He said :—

"I would like to state as an economic truth that between nations as between individuals, there is a mutuality of interest and if one country increases its production and expands its market it also increasos its buying power for the products of other countries. With an investment in Canada of approximately 2½ billion dollars and an annnal trade in commodities of over a billion dollars, there exists a business relationship between the United States and this country calling for the most thoughtful consideration on both sides."

It is well to point out that Canada is the second best customer of the United States. During the year ending February last, for example, Canada bought 600 million dollars worth of goods from the United States. These imports are widely diversified. Not only do we take raw materials, such as cotton and coal, and foodstuffs of a class that are not produced in Canada, but we also take a tremendous amount of iron and steel products and manufactured goods of many kinds. Bear in mind that the American manufacturer who is doing a great deal of advertising in the United States is also advertising in Canada, because our people read an enormous number of American publications. The diversity I have mentioned in referring to Canadian imports does not apply to nearly the same extent when we come to consider Canadian imports to the United States. Pulp and paper and other forest products are by far the largest items. The remainder is made up of such things as furs, copper, precious metals, small amounts of various agricultural products, asbestos and last but not least, beverages. I wish to lay particular emphasis to the fact that 65 per cent of all Canada's imports are from the United States, while the amount we sell to the United States is only 35 per cent of our total exports. We buy from you each year over 100 million dollars worth of goods more than we sell to you. The United States is Canada's main source of supply and any increase in our prosperity is at once reflected in increased purchases of U.S. goods. That is where the partnership comes in. What happens when you buy more from us ? Instantly we buy more from you. And here a very interesting situation is exposed. In the years preceding the war, the United States was becoming less and less a great foodstuff exporting country. Growing population made the United States require more and more of its own agricultural products to feed its own people, for example, a clever analysis of the world's wheat situation published some time ago states that the great increase in your population in the thirty years prior to the War, had by 1914 resulted in the fact that your domestic requirements for wheat were approaching the quantity then being produced, and the day was evidently near when there would be an exportable surplus only in years of exceptionally favourable harvest. The War arrested this trend and high prices for foodstuffs resulted in an extension of U.S. production. Subsequent to the War, we might have expected, in the ordinary course of events, that the pre-war situation would gradually return ; and perhaps it has to a certain extent. The very existence of the Fordney Tariff bears witness to the fact that the days of the United States as a great food exporting country are thought to be over, since the tariff must be based on the expectation that imports of food stuffs are possible and must be kept out. Even taking the figures of the year so close to the end of the War as 1920, one finds that the rural population of the United States was but 50 per cent of the total, compared with 51 per cent in 1900. The land harvested in 1920 was 348,000,000 acres, an increase of 23 per cent over 1900, compared with a population increase of 38 per cent in that period. Since then I think that the acreage under cultivation has decreased somewhat. Now if, in the future, your production of foodstuffs could be expected to increase less rapidly than

your population, this would be a factor of the very greatest importance for Canada. I am not sure, however, that we are justified in expecting the situation to work out in this way. The high rates of the Fordney Tariff would seem bound to stimulate the domestic production of various lines of foodstuffs and thus postpone for some considerable time the day when the United States will import them in any quantity. We in Canada must acknowledge regret that this is so, because under other circumstances our proximity to a growing country of 120 million people would have given us an increasingly large market for our foodstuffs (a market that even a moderate tariff would not have kept us out of) would have enabled us to progress by leaps and bounds and to buy larger quantities of United States goods and to offer better opportunities for United States investors. We would have turned out more of the commodities that we produce so cheaply and so well, and would have bought more of the articles that you specialize in.

I commenced to draw up these remarks with the intention of never mentioning the word "tariff". That terrible word is making strong men turn pale in our country at the present time, and I feel that it is perhaps not a word that should be uttered in public anywhere on this continent. However, I found it would be impossible to avoid it in any discussion on business relations between the two countries, because it has been an extremely important factor in those relations. I hope you will believe me though when I say that these references have been in no way critical, nor do they constitute an appeal for special consideration for Canada. So far as Canada's prospects were concerned, I wished to show you the bad as well as the good side of the picture and on the bad side, we cannot fail to place a restriction in markets. The bad side is, after all, I am glad to say, not nearly as important as the good. We are developing markets elsewhere. Our cattle and grain and dairy products are going to Europe in increasing quantities. We sell more to South America, more to the West Indies and much more to the Orient. The development of our export trade to the Orient has been remarkable. I firmly believe that the utilization of our natural resources to supply the requirements of the world outside of America will enable us to prosper and to grow at a very satisfactory rate. I have tried to avoid casual optimism and too frequent references to our natural resources. We have got into trouble before now through too glowing a picture being painted in Europe,- a picture which immigrants did not find fulfilled when they came expecting quick successes. Undoubtedly we have these natural resources that we talk about, but what a country sometimes overlooks is the fact that natural resources are no good, except possibly as ornaments, unless their commercial development is profitable. That such development has been and is being found profitable in Canada, is shown by the results achieved to date. As for the future, perhaps it will be best to let the statistics of the next ten years tell Canada's story. In many ways the development has been most satisfactory during the last year, and increasing immigration and more prosperous business conditions have inspired a feeling of confidence at the present time. I think that the United States, as a participator in our trade in commodities, and as a generous and intelligent investor of capital in our country, will have no cause to criticize her partner for not equalling past performances. More and more of recent years we have had occasion to congratulate ourselves on the number of visitors we were attracting from south of the line, and I sincerely hope that greater numbers will come in future to see how we are getting along. They could not find a warmer welcome in any country in the world, and their visits cannot fail to cement the long standing relationship that has been so pleasant and profitable for us and, I hope for the United States as well.

Professor Roerich, head of an expedition which has been three years in unexplored Asia, reports, according to the *Chicago Tribune*, the discovery at Hemis Monastery, in Tibet, of Buddhist manuscripts, believed to be 300 years old, which mention the passage through the country of a traveller referred to as "Issa, the best of the sons of men".

Issa is believed to be identical with Jesus, who is stated to have left his parents in Palestine, and to have travelled by caravan to India, where he preached to the low castes.

His return to Palestine, and his trial by Pilate are also mentioned.

Tube Wells in Bangalore.

By C. Hayavadana Rao, B.A., B.L.

Municipal Councillor, Bangalore City.

It is a truism to say that during the past twelve months or so the question of water-supply in Bangalore has been, what has been popularly described as a "burning question" of the day. Within the past ninety days, the position has steadily deteriorated, so much so that both in the C. & M. Station and in the City herculean attempts are being made to meet the acute situation that has come to prevail. Among the several courses of action open to the two Municipalities concerned, one was the re-opening of the old wells and another was the diverting of the water from the adjoining tanks into the Filter beds by direct pipe connection. Both these devices have been adopted, but the area covered by the two parts of the City which have largely outgrown their original dimensions, is so wide and the lack of wells in the newer extensions and the lack of pressure at the head have rendered their adoption less useful than would have been the case in other circumstances. To meet the new situation, the City Municipality has drafted in an intelligent and active Special Officer for the purpose of pushing through the well work generally in the City area. This Officer, by the way, in a very short time, opened up some of the most promising wells in different parts of the City, where the position had become most intolerable and by the rapid construction of masonry Reservoirs and the laying down of special pipe lines, continued to make the water readily available to the people who were far away from the wells themselves from which the water was tapped by Electric Motors and Pumps. The use of Myer's Hand Pump, an extremely simple and lightly worked of machines known, has made the supply in these areas both efficient and steady. A fitter has been added on to the staff and he and the temporary officials go round daily—nay hourly—and keep the pumps in working order and ensure that the people get the supplies needed.

So far about tapping water from wells existing and re-opened for meeting the emergent needs of the inhabitants of the worst affected areas. The Special Officer mentioned above (Mr. D. Madhava Rao, B.A., B.E., of the Mysore P.W.D.) was, in the meanwhile, troubled by the distress felt in the newer extensions of the City, where wells are the exception and those existing yield but a scanty, nay precarious, supply. The failure of the public and house taps has been most pronounced in these areas, owing to insufficient pressure at the head. The happy idea struck the Special Officer of diverting the well-boring apparatus of the Department of Industries for the immediate purposes of the City Municipality. These sets consisting of two Musto's hand-power drills and one hand set were soon transferred to the Municipality and the Special Officer put them down to try a bore or two in the most difficult regions in the City. In the Basavangudi area, the soil is rocky, more so than elsewhere, and well sinking has been in most cases a thankless job to the house-owner. The Officer chose two wells which had totally failed. In one of these, at the extreme south end of Basavangudi, he got a bore-hole put 12 feet deep from the lowest point of the well, which was low at the time 62 feet deep, and from there let down the pipe line. This well was fitted up by a pump and has, since the tube was put in, yielded a never failing supply of water. A similar well, also without water, at the extreme northern end of Basavangudi, was next dealt with and here too the success has been phenomenal. The bore-hole put at the bottom of the well is only 13 feet, the well itself being about 50 feet deep from the earth's surface to the point where the hole begins, and the supply from the hole is both steady and satisfactory. A Myer's pump has been set up and the installation has been working quite satisfactorily. Attracted by these successes, a resident in the western part of Basavangudi suggested that he would take the risk—if there was any risk at all involved in the venture—of the Special Officer sinking of a pure tube well in his own residence and at his own cost. The Engineer, who desired to try such an experiment, readily agreed. The part of Basavangudi in which this new trial was to be made forms its extreme western boundary, a part with a reputation for the hard and rocky nature of its soil. Trial wells so far sunk had mostly proved abortive and the opinion had gone forth that it was not possible to tap any fresh water in the area. A rock-boring set was accordingly installed

and the work begun in right earnest. On the first day, a depth of twenty feet was reached. The first ten feet consisted of a hard, gravelly soil, followed with sticky clay. This layer prevented progress. The rock boring chisel would not make any impression on the soft incompressible soil nor would it go down into it. The soil would not readily mix with water and the mud pump was not capable of removing it for the same reason. The boring operation, at this stage, accordingly consisted of loosening the earth by clay augers and then removing the stuff with the mud shell. This proved a tedious and slow process but there was no go for it but to resolutely stick to it. The casing pipes were used only up to a depth of 35 feet from the earth's surface. Beyond it, it was not found necessary as the soil was very sticky and would stand without the sides slipping. At a depth of 52 feet, water was tapped after the boring had been carried through mica mixed, soft rock to a depth of 6 feet. At this point, the water level rose to a depth of 7 feet. Boring was further continued up to a further depth of 18 feet in the same rocky mica mixed strata. The total depth thus reached was 70 feet, the tube containing at this stage 25 feet of water.

The removal of the wrought-iron casing pipes proved troublesome. Neither increased labour nor pouring of water to loosen the sides helped towards their removal. They had got stuck up so tightly that the application of additional force resulted in one of the pipes being pulled out from the one below it along with the screw threads, which were badly damaged. To prevent a recurrence of this trouble, about 12 feet of earth was removed to a diameter of 3 feet till the second pipe was reached. This was fitted with clamps by means of which the rest of the pipes were pulled out. Eight men working at the crab winch and three men working at the one ton differential pulley block proved of no avail in shaking the casing pipes. Two days were thus lost in the attempt to remove the casing pipes. On the third day, a big screw jack was used beneath the clamps. The screw jack worked on one side, the differential pulley on the other, while a rope was tied to the clamp worked at the winch. Though all these three worked simultaneously, they could only just disturb the casing pipes. So tightly had they settled down in the sticky soil that only the repeated simultaneous application of these three devices made them eventually yield. The next step was to insert the permanent pipes into bore-hole. Wrought-iron pipes which should be had easily to the required size were condemned as they would rust and prove useless at the end of a relatively short period. Next reinforced concrete pipes were thought of. But they were not readily available, but had to be got down to order. These, no doubt, would serve the purpose well with the additional advantage of being in convenient lengths. But the estimated cost proving heavy it was finally resolved upon to use stone-ware pipes, which are both cheap and efficient for the purpose in view. The sockets of the pipes being of larger diameter than the diameter of the pipe itself, it was decided to remove them by careful chiselling before insertion. Next, there was the difficulty of letting the pipes down to a depth of 70 feet. The difficulty was aggravated by the shortness in the length of the pipes themselves, each of which is only 2 feet long. One method suggested was the preparation of a suitable clamp in the Workshop with springs, etc., by means of which the pipes were to be let down and released at the bottom. But the working of this suggested clamp seemed not only doubtful and problematical but its preparation appeared to involve time and money. Experience gained in the first two wells where bore-holes had been sunk, proved useful here. In one of these, which was deepened to a depth of 13 feet, where the bore-hole was full of water, a man got down into the well and let the pipes down gently in the water, one after another. The buoyancy of water was found to counteract the downward force of the falling pipe and keep the pipe below from being damaged. A little reflection showed that this would not be possible in a tube 70 feet deep with only 25 feet of water. The difficulty, however, was soon overcome by the adoption of a small device. A thin but strong rope, 150 feet long, was passed through a pipe. The rope was doubled out and the pipe let down by holding the two ends of the rope together. When the pipe was deposited at the bottom, one end was released and the rope pulled up by the other, leaving the pipe at the bottom. All the pipes were thus easily let down without any injury to any of them. When the pipes were let down, a central rod was inserted from the top to the bottom and was retained to act as a guide. After all the pipes had been let down, this central rod was moved

along the sides of the pipes to set them one over the other in a straight line correctly. Recently, a simpler method has been devised in this connection. It consists of another casing of galvanized iron wires which hold in position the pipes, and render their alignment both accurate and safe. Next the earth that had fallen while the pipes were let down was removed by the mud pump and a Myer's pump was fitted up to lift the water for use. It has been found that water could be drawn continuously without fail by this pump. The supply from the bore is steady and the replenishing quick, the water-level being maintained at the same level. The above tube well in the Gavipur Extension in west Basavangudi area is the first one of its kind to be sunk in Bangalore. It differs from the bore-holes sunk in the two old wells in Basavangudi mentioned already in being from top to bottom a mere tube, 4 inches in diameter and 70 feet deep. It also differs from tube wells of the Abyssinian type because it is made up of cheap stoneware pipes instead of wrought or cast iron pipes. The total cost of the well, including labour, stoneware pipes, pipe-hire, pump, carpenters' and masons' work complete, aggregated only about Rs. 200. A masonry well in the same area, 70 feet deep, would, it has been estimated, cost at least about Rs. 1,050. The actual time taken has been calculated at $4\frac{1}{2}$ days of 8 hours each, as against a possible 60 days likely to be required by a masonry well. The water is light, sweet and limpid.

The advantages of tube wells are many. They are relatively cheaper than masonry wells of same depth; they can be sunk more rapidly; and they enable us to prevent waste as they help us to readily give up the work at a spot where rock is met with at a short distance from the surface. Another advantage is that subterranean springs could be tapped through their aid, the water obtained from them being usually more pure and more sweet. In soft soils, a tube well is put down with remarkable rapidity. What is of paramount importance at the present moment in Bangalore is that tube wells will enable small supplies of water (about 300 gallons an hour per tube) to be obtained rapidly in a highly economical manner. They are, as has been observed by one writer, quickly put down and quickly removed and are specially valuable for finding the position, extent and yield of water-bearing strata of moderate depths. Practical experience shows that the deeper a tube-well, the better is the yield of water, especially where as in the Gavipur well, the sub-soil is suitable. The difficulties in Bangalore at present in regard to water supply being lamentably bad, it is to be hoped that the half-a-dozen well-boring sets now reported to be working in different parts of the State will be indented upon, together with the trained men employed in connection with them, and the same made available for ready use in Bangalore. As quick action is imperatively called for, it is to be hoped that the Government of Mysore will not hesitate to take up the matter without delay.

Since writing the above, three more tube wells have been set up in the Basvangudi area, on the public roads, for the use of the public. They are giving good satisfaction, though it is unfortunate the handling of the pumps installed by the public has resulted in temporary inconveniences. This matter, I hear, is receiving close attention.

Agriculture in Bombay, 1924-25.

"In preparing a report on the activities of the Agricultural Department during the year 1924–25," says the Director, "I do so in a more hopeful spirit than on any previous occasion. The year was, on the whole, a good one,—and, further, the purpose for which the Department exists, namely, so to work as to bring about an increase in the value of the produce of the land in the Bombay Presidency, seems to have made considerable progress and to afford promise of greater progress in the near future." There are gaps in that promise, and areas where little progress has been made, but generally speaking, we can look round the Presidency and see, in most areas, improvements worked out or introduced by the Agricultural Department in large scale use, a gradually increasing desire among the cultivators for fresh developments, and a very strong movement towards the organization of local agricultural development by the people themselves in many areas.

The improvement of crops largely by the supply of pure or more valuable seed, has been perhaps the biggest cause of the increase in the value of agricultural production.

One of the most striking examples of this is the gradual development of groundnut as a cultivator's crop in Khandesh and in Upper

Gujarat by the use of quick-growing varieties of high oil content by the Agricultural Department. These have led to an enormous extension of the cultivation, as is shown by the figures for the area in 1912-13 and in 1924-25.

	Groundnut Area	Khandesh Acres	North Gujarat Acres
1912—13		4,119	395
1924—25		1,40,190	39,151

When it is considered that this enormous increase means partly that a crop worth Rs. 40 per acre is replaced by one worth Rs. 80 to Rs. 100 per acre, and partly that it means an equally valuable crop to grow in substitution for cotton, the full value of the change will be perceived. Khandesh groundnuts, from the stock imported by the Agricultural Department, have now established themselves on the Bombay market as the most valuable in India, and importation of new stock to assist in maintaining the standard has recently been made.

Another introduction of very great value is the wheats from Pusa and the Punjab, which have been eminently successful both in Gujarat and as an irrigated crop in Sind. In the last case "Pusa 12" wheat is spreading rapidly in Upper Sind where the area has increased from 5,000 acres to 11,000 acres in one year. This variety does not seem so useful for bost land, and the Department is in active pursuit of another type which will fill the need. In South Sind "Punjab 11" wheat has spread in the Jamrao area, and will spread everywhere where the water supply allows wheat to be sown. In Gujarat, the type of wheat which has proved most successful has been "Pusa 4", and this has become exceedingly popular in the Panch Mahals and in Ahmedabad both on account of its increased yield (200 pounds per acre at Dohad) and the higher price it commands.

If we turn to cotton, perhaps bigger things have been achieved than in any other direction. In most cases, the varieties now supplied and maintained pure by the Agricultural Department, have been evolved at the Department's experimental stations. In Sind, however, introduced American cotton is now spreading fast on the Jamrao, in spite of a water supply which continually gets poorer for American cotton. It is anticipated that the limit of American cotton in Sind will be about 25,000 acres, until the Sukkur Barrage water becomes available, and the progress towards that point (using two varieties developed in the Punjab 'F4' and 285 F) is shown in the following figures :-

1917 ..	78 acres.	1922 ..	7,000 acres.
1919 ..	800 acres.	1923 ..	14,752 acres.
1921 ..	3,078 acres.	1924 ..	20,000 acres.

In other cases the Department of Agriculture has evolved its own improved types and spread them. These have now come into common use all over Gujarat south of the Narbada, all over Khandesh, over the whole of the Dharwar District, and to a less extent in other parts of the Southern Mahratta Country and the Deccan, and in the 'deshi' cotton growing area of Sind. The maintenance of these improved types pure means an elaborate organization for annually producing fresh seed, multiplying this, and then distributing it, but the result has been that in Gujarat the whole area south of the Narbada is rapidly coming to grow one type (1027 A.L.F.) which is highly approved by the trade and whose growing has been estimated by a commercial authority to mean an addition of 30 lakhs of rupees annually to the amount which would have been received if the crop had remained of the kind it was in 1919. A similar position has also been reached in the southern tracts of the Bombay Presidency.

Improvements are also being effected in the production of rice, tobacco and sugarcane. Last year the Department was for the first time able to spread a new type of 'Kolamba' rice on 10,000 acres. This experiment is being extended on a much larger scale.

While the improvement of seed is one way of increasing agricultural yields, others consist in better tillage and better manuring. Improved implements have been found and introduced in almost every region except perhaps Upper Gujarat which has very special difficulties. The cost has now been lowered to an amount within the reach of most substantial cultivators, and this with the organization of implement societies, the pushing of iron ploughs by Taluka Development Associations, and propaganda by the manufacturing firms themselves, is rapidly leading to the replacement of the old Deccan plough. It is estimated that more than 100,000 iron ploughs are now in use in the Bombay Deccan. In other areas the introduction of improved implements is slower, but, in Sind, at any rate, is now proceeding very fast.

The introduction of concentrated manures is an uphill task, says the Report. The use of concentrated manures for cotton has hitherto been almost unknown, but as a result of

intensive propaganda in East Khandesh the use of castor cake as a manure for cotton is becoming very popular and widespread.

The year under report was decidedly worse than 1923–24 as regards the damage to crops done by insect pests and plant diseases. Of the very serious insect pests the Jowar borers were particularly active and did more damage than for several years. In many parts of Lower Gujarat about 70 per cent of the plants were affected. Among other cereal crops *bajri* was again very seriously attacked by swarming caterpillars in the northern part of the Deccan, and the caterpillar of the Panch Mahals again did a great deal of damage to the young seedlings of maize and other cereal crops in both Kaira and the Panch Mahals.

Fruit pests are decidedly increasing, the premier place in amount of damage being taken by the mango hopper or *jassid*.

Improvements in Cattle.

The work done in the last few years in trying to raise the standard of the cattle of the Bombay Presidency seems to be now bearing fruit in many areas. The Agricultural Department controls no fewer than half a dozen herds of pedigree cattle of different breeds. These are at the Chharodi Farm in North Gujarat and the Surat Farm in Lower Gujarat, both of which are maintained for the *Kankrej* breed and from which bulls are distributed into the districts on the premium system. The Bankapur Farm in Dharwar from which Amrit Mahal cattle are distributed and the Willingdon Cattle Farm at Karachi where a very fine herd of red cattle is being maintained with a few Thar-Parkar animals there also. In addition to these Government herds, there are several other stocks of cattle from which first class bulls can be obtained. Of these that of the Shirpur Agricultural Association in Khandesh is very prominent for its fine Tapti-Khillari animals. Four successful cattle shows were held, one at Chharodi (Gujarat) for the *Kankrej* breed, one at Mahud Budruk (Satara) for the Mhaswad Khillari breed, a third at Athani (Belgaum) for the Krishna Valley breed, and a fourth at Karachi for the red Karachi cattle. The show arranged at Bankapur for the Amrit Mahal breed had to be cancelled on account of rinderpest which was very prevalent during the year.

Propaganda and Organization.

While the officers of the Agricultural Department are trying to secure the introduction of improvements in every district, reliance is also being placed on the enthusiasm of local bodies, the Taluka Development Associations subsidized by Government, to get many improvements adopted and their activities have been very widely effective during the last year. There are now 48 Taluka Development Associations in the Bombay Presidency, and they have, altogether, received a Government subsidy of Rs. 24,312. They have been very actively engaged in extending the use of improved implements of many kinds, of improved seed of cotton, wheat and other produce and of methods for the prevention of *smut* in *jowar* and of other diseases. They have organized shows, have pushed the formation of co-operative societies for the sale of produce or the purchase of seed, and in one case at least have arranged an admirable system of fodder storage. And, generally, these associations, the first of which was only founded in 1922, have become a very essential part of agricultural propaganda in the country.

In the matter of rural organization the Agricultural Department works in close co-ordination with the Co-operative Department and the co-ordination between the work of the two Departments is secured by the fact of its being directed in each part of the Bombay Presidency by Divisional Boards of Agriculture predominantly non-official which meet once a quarter and control the propaganda and organizing work of both departments in the various districts.

The result of their efforts in the matter of co-operative purchase of agricultural requisites had not been great. A few societies exist for the co-operative supply of concentrated manures, seeds and the like, but they do not so far seem to have met much of a realized need. On the other hand, it may now be said that societies for the supply of implements of all kinds on hire are an established success in many areas. One of the secrets of their recent success (as against much earlier failure) has been their organization on a large enough scale to ensure business management.

On the other hand, in the matter of co-operative sale of produce, great things have been accomplished and there has been much extension in the year under report. The co-operative cotton sale societies at Hubli and Gadag, existing primarily for the sale of improved cotton derived from seed provided by the Agricultural Department, are a monument of what can be done in the co-operative

organization of sale. Their work has extended during the present year, and they have become not only sellers of produce but also growers on a large scale and distributors of improved seed. The organization for Co-operative Sale in Gujarat is not so advanced, and the societies there simply arrange for the ginning and sale of their members' produce in common, and reserve the seed for further distribution,—but they have much developed in 1924–25. The recent attempts at co-operative sale of *gul* in the Mutha Canal Area seems to have become an established success in 1924, and this is an advance on the semi-co-operative method which has been in use in the Nara, Godavari and Pravara Canal Areas for some years, where a branch of the Bombay Central Co-operative Bank has advanced money and supplied manure to local co-operative credit societies, and sold produce on their behalf.

The expenditure of the Department amounted to Rs. 15,90,000 during the year 1924-25 as against Rs. 15,12,000 incurred in the previous year. The receipts amounted to Rs. 3,28,000 as against Rs. 3,39,000 in the previous year.

Industries of Bengal, 1925.

The Resolution on the Annual Administration Report of the Department of Industries, Bengal, for the year 1925, refers to the progress made in the Department in certain directions deserving of attention. After very careful researches and experimentation by the Industrial Chemist formulæ for several very good compositions for match heads have been worked out, while experiments on damp-proofing of matches are being conducted. At the instance of the *Bande Mataram Match Factory* experiments were undertaken under the control of the Chemist in the bleaching of *Gengwa* wood as a result of which the most economic bleaching powder and the process of treatment were evolved.

The Industrial Engineer has resumed experiments for devising improved appliances for the benefit of workers in the bell-metal industry. He has succeeded in devising an improved hackling machine for the development of sunn-hemp rope making on cottage industry lines. Two other useful machines which promise success have also been improved by the Industrial Engineer, *viz.*, one for spinning jute yarn as a cottage industry and the other for bending and marking of umbrellas. The long-standing question of cutting conch-shells more rapidly and under better conditions than by the primitive method now in use has approached nearer solution by the development of a simple and satisfactory machine devised by the Industrial Engineer.

In the Calcutta Research Tannery very useful investigations were conducted not only into the methods of producing the more important varieties of commercial leather from the available raw materials under the local climatic conditions, but also into some of the chemical problems in connection with the tanning processes. The cow hides of different parts of the province were being surveyed along with the investigations on the manufacture of box sides.

Textile researches of a very useful character were made at the Serampore Weaving Institute. Experiments were made with success in the weaving of coarse jute and coir fabrics and in the spinning of jute, coir, sunn-hemp, waste silk and wool as well as in the extraction of coconut fibres. Government note with interest that experiments regarding the possibilities of using the fibres of water-hyacinth stalks by spinning and weaving them into strings and matting were conducted at the institute, and consider that the investigation should continue with a view to finding out all further industrial possibilities of this noxious weed.

Research Tannery.

The Calcutta Research Tannery has maintained its good record of useful work. It is gratifying to note that two of the apprentices of the tannery who have finished their training have started the business of leather-case making on their own account and one of them now employs as many as 18 workmen. The Governor-in-Council has now finally decided that the Calcutta Research Tannery should be retained as a permanent institution under the designation of Bengal Tanning Institute thus rejecting the recommendation of the Retrenchment Committee, that the trade should pay for the tannery after the expiry of three years from the 1st May, 1922.

Serampore Weaving Institute.

This is another institution of whose activities the Industries Department can well be proud. There is an insistent demand in the country for weaving instruction, and the Central Institute at Serampore with the district and peripatetic schools as well as the demonstration parties attached thereto are going a great way

in meeting this demand. But the Governor-in-Council is of opinion that much more yet remains to be done not only by way of increasing the number of district and peripatetic schools, but also by increasing the number of demonstration parties. Sanction was accorded during the year to the proposal for the establishment of a district weaving school at Suri experimentally for one year with the co-operation of the District Board. One demonstration party has also been added to the staff of the institute. Administrative approval was accorded to the establishment of 12 additional peripatetic schools during the year under report and the establishment of two more has been administratively approved since the close of the year. The starting of these peripatetic schools now awaits the provision of funs.

ASSISTANCE TO INDUSTRIES.

At the present stage of industrial development of the country, local industry must necessarily depend on technical assistance and advice, and the Governor-in-Council notices with pleasure that the Industries Department promptly responded to the call of industrialists seeking such help from the various parts of the province. The department also did all that is practicable to secure special concessions on behalf of such of the industries as applied for them. It has also been alive to the fact that one of the essential factors for industrial development in this country is the organization of markets for the finished products, and all that is practicable has been done to secure facilities in marketing for those who have applied for the same.

STATE AID TO INDUSTRIES BILL.

The Governor-in-Council has now finally decided on the necessity of legislation for state aid to Industries. Steps are being taken to draft the Bill so that it may be presented to the Legislative Council as early as possible. Many other provinces in India have already enacted local legislation on the subject. The proposed legislation when passed by the Council will remove some of the more serious difficulties which now stand in the way of industrial development of the Presidency - specially on the lines of cottage and small industries.

Protection for Indian Glass Industry.

By the "Bystander".

Those interested in the Indian Glass Industry —and they are to be found in the Bombay Presidency, the C.P., the U.P. and the Bengal Presidency—have submitted their case for protection to the Government of India. In summarizing below the material parts of that representation, we would urge respectfully public attention to it. The industry deserves encouragement both from the public and the Government in the position in which it finds itself to-day The representation states :—

We, the undersigned Glass Manufacturers of India, have the honour to approach you and put before you the case for protection for the Indian Glass Industry. The Glass Industry in India is new and it has been struggling for the last twenty-five years and more. The Glass Works, which lie scattered throughout the country, have been mainly manufacturing chimneys, globes and lampware, though some factories are manufacturing articles in other lines too, such as bottles, phials and other containers, stationery requisites, electric cells and glass tiles. These goods have been continuously supplied to most of the Indian Railways and they have met their approval. The products of the Indian Glass Industry have also been recently patronized by Government and Semi-Government bodies and by the glass consuming public in general.

POST-WAR COMPETITION

The industry is only more than two dozen years old, and to-day it is experiencing a great handicap on account of the keen post-war foreign competition in the very line in which the Indian glass factories have been so far working. We mean the lines of chimneys, globes, pressed ware, bottles, phials and bangles. Many glass factories were started in the war time and their total number went up to 50 or 55 ; but most of these ceased to work as soon as the war ended and keen foreign competition came in. This shows how greatly it stands in need of protection in its infancy. Foreign glass industry is of long standing and it has the advantages of efficient and trained labour and up-to-date methods, and as such it is able to put up keen competition It is but natural, under these circumstances, that the industry should turn for protection to Government who have now definitely accepted in the best interests of India a policy of protection to be applied with discrimination, along the lines indicated

in the report of the Fiscal Commission, in order to foster the growth of industries in India. The industrial growth in this country has not been so far, it need hardly be said, commensurate either with its size or with its needs, though during war time the Indian glass industry had almost reached a point at which it met nearly 60% of its glass requirements in chimney, globe, bangle and other lines.

CONDITIONS OF PROTECTION SATISFIED.

The conditions which have to be fulfilled according to the same report by an industry before its claim to protection could be considered valid are, we respectfully submit, eminently satisfied by the Indian glass industry. (*a*) There is, we may be allowed to point out, in the first place every natural advantage for the healthy and vigorous growth of glass industry in India. There is an abundance of the principal raw materials silica, lime and coal in the country and their supplies can be said to be almost inexhaustible. Good and intelligent labour is available but not a sufficient and steady supply of trained and expert labour; and even the Indian climate is not uncongenial for this industry as is said by people who can speak with authority on this subject. In addition to all these advantages there is a large and growing home market to absorb the products of this industry. It may be noted in this connection that the annual glass imports of India in blownware (chimneys, globes and lampware) alone, not to speak of other glass articles, exceed thirty-four lakhs of rupees if we take the average of imports in these lines for the years 1919 to 1923. It may be stated that India is actually supplying to-day nearly 30% of the Indian demand in these lines. It is necessary further to remember that the market for glass in India is slowly but surely expanding as the interior of this vast country is being brought more and more under the influence of modern civilization by means of spread of education and growth of the means of communication and by means of increased contact between the advanced and backward sections of the people. Glassware is used to-day on a much more extensive scale than twenty-five years back due either to choice or to fashion or to necessity, and everything tends to show that its use is steadily growing. With such advantages of raw materials, intelligent labour and growing market the industry is sure to thrive and prosper if it but receives at the hands of the State sufficient protection in its early stages, to enable it to successfully overcome the initial difficulties of an infant industry. (*b*) The industry is passing to-day through great difficulties and many glass factories which were working in 1920 have actually closed down during the last four or five years. If this infant industry is to live and grow with vigour at all within a reasonable time and establish itself on a solid foundation as a national industry, it surely never stood in greater need of protection and help than to-day when competition from well-established foreign glass industry, especially that of Germany, Austria, Czecho-slovakia, Belgium and Japan, with all its advantages of expert labour and up-to-date methods, has become so acute and keen. The position is bound to grow from bad to worse in the absence of any proper and early action on the part of the Government and, it is feared, it may even become impossible at no distant date. The industry will be able to overcome all these difficulties in its initial stages only under a healthy regime of protection and it will not then be long before it is able to face competition in the open market. (*c*) The possibilities for its vigorous growth in India are so great that the industry will eventually be able, so far as we can judge, to stand alone in the open market without the shield of protection, when our labour becomes expert and improved methods are used. The protection, therefore which is sought by us is only of a temporary character. Protection granted, it is quite possible to improve and at the same time to increase the output of the industry and thus gain the advantages, which our foreign rivals have done, under better conditions, by training our labour and by adopting improved methods of manufacture. The industry will, in course of time, be able to successfully venture in other lines of glass such as beads, false pearls, bangles of quality and style, etc., which have not been so far touched. It will thus gradually be able to substantially meet the glass requirements of the country. Stability and reasonable profits being assured under a healthy protective regime, more capital will seek investment in this industry, many more Works will be established and the old ones that have closed down will be revived. The industry, as it stands even to-day, meets no insignificant proportion of the chimneys, globes and other lampware needs of the country. The Indian glass factories produce and supply between them chimneys, globes and other lampware to the extent of about 12 lakhs of rupees even to-day, *i.e.*, more than 30% of the total requirements of the country in this line, and this percentage was even higher

during war when it stood at about 70%. This alone strengthens our viewpoint.

Prospects of the Industry.

It is certainly not claimed here on behalf of the industry that it will be able to produce all kinds of glasswares and thus meet the whole of Indian demand which goes at present on an average, to the extent of about 250 lakhs of rupees, in the immediate future. But it can be said with justice that it will be able to meet the whole of the demand for chimneys, globes and other lampware, and also to a considerable extent that for bottles, phials and containers of other sorts, sheet and plate glass, beads and false pearls, bangles, and table-ware such as decanters, tumblers, etc., at competitive prices.

Existing Difficulties.

At present there is an *ad valorem* import duty of 15% on Soda Ash, which is used in large quantities in the manufacture of glass, and which has to be imported. This duty is a postive handicap on this industry since this raw material is an essential one. The crucibles or pots which have also to be imported to a great extent, have to pay an import duty of 15%. Facilities for transporting by rail the finished products are not what they should be. Indian railways have so far pursued a policy in this respect which has certainly not been very encouraging to the growth of indigenous industry, railway rates schedules having been based on high and indiscriminate bases. It is but natural for us to expect the Indian Railways to give preferential treatment to the products of Indian industries, and to remove certain unreasonable restrictions and obligations imposed on the booking of Glassware.

Favourable Railway Rates Required.

The traffic conditions relating to raw materials required for and the finished products turned out by the Indian glass industry should be made more favourable and since everything is coming down to the pre-war level, the railway rates which were substantially increased from 1919 to 1922 should also be reduced to that level. But they still continue to be high though slight reduction is made in the case of coal alone.

Concentrated glass industry will not be a boon to a vast country like India since hollow and fragile wares require a far higher cost to transport them than that required for the transport of their raw materials. The Works must, therefore, remain scattered over the country as at present, serving the needs of local areas. This proves the necessity of making raw materials mobile as far as possibl by giving facilities for their easy and cheap transport

Keen Foreign Competition.

To illustrate clearly the keenness of the competition which the Indian glass industry has to face to-day, we shall take the example of a standardized article like the ordinary Dietz type globe which sells so extensively. German, Austrian, and Japanese globes of that type are offered to-day at the amazingly low price of about Rs. 1-8-0 per doz. The Indian glass manufacturer does not find it paying at all to offer this article to-day at this price. He merely struggles and has nothing left for the improvement of the industry. Foreign industry is of long standing and it has the advantages of up-to-date machinery, methods and trained and expert labour. But the Indian glass industry does not possess these advantages and it has to struggle hard to keep going. If the manufacturer is not fortunate enough to live to-day, he has actually to work at a loss or close down. And this loss becomes all the greater when it is remembered that he is mainly manufacturing chimneys, globes and other things in which the margin of profit was never high even in prosperous times and in which the market is so depressed to-day. This state of things must not be allowed to go on and the industry ought to be protected for some time.

War Time Assurances.

It may be pointed out *en passant* that towards the close of the Great European War, the Intelligence Branch of the Indian Munitions Board (a war time creation of the Government of India and then working under the Commerce Department) had addressed a letter No. 1—203/1, dated Simla, the 29th July 1918, to the various glass factories in India, asking them to supply certain information. In it the Indian Munitions Board had clearly shown its anxiety (and in this we can apparently see the anxiety of the Government of India also) to place the Indian glass industry on a firm footing so as to enable it to withstand competition from abroad, after the War. It will be seen from this that Government have already held out clear hopes of help and protection to this industry, apart from the question of the more recent and definite adoption by Government of a policy of discriminate protection. We would like to refer Government to the letter of the Indian Munitions Board, reference of which has been furnished above and to point out further that when Government needed



The Late Mr. C. R. DAS
whose Anniversary was celebrated on 11th July 1926



Rajasabhabhushana
The Rev. Father A. M. TABARD, M.A., M.B.E., M.R.A.S.
(Died July 2, 1926)
whose interest in Mysore was both strong and abiding.

glass articles. Indian glass factories have supplied them at that critical time of war when their import had practically ceased

Why Protection is Sought.

It is, therefore, necessary for the Indian glass industry to have protection, if it is to live and thrive, and it may not be out of place here to point out the ways in which this can easily be done, though the ultimate decision, we recognize, as to the ways must rest with the Government when they see the justice of this demand. The objects that are sought to be attained by protection are firstly, the preservation and healthy and vigorous growth of this industry, and secondly, the attracting of capital to it and the promotion of the development of India's natural resources.

Protection must be Adequate.

The protection must, therefore, be adequate if it is to serve this purpose: Hence the immediate needs as well as the future of the industry have both to be considered. Certain raw materials such as Soda Ash, Crucibles, etc., should be exempted from import duty for this industry or a rebate allowed in their case. There should be made a uniform increase of 10% in the import duty on all kinds of glassware and further the Indian glass industry should receive a bounty of 15% for a period of 10 years. The interest of the industry will thus be served and that of the consumer will not be much affected since the output of the Indian Glass Industry will receive a stimulus and the prices of glassware will only be slightly changed. The industry will thus be able to place itself on a firm footing and will attain sufficient strength and vitality to be able to face open competition.

The requests made by the industry are both moderate and feasible. We should be glad to hear that the Government of India are agreeable to the consideration of the representation on sympathetic lines.

Indian Economic Enquiry Report.

By the Editor.

Not long ago, we had occasion to print a letter from Mr. R. H. Coats, Dominion Statistician Canada, on the above Report. Recently we have heard from him again and we print below the text of the letter, which speaks for itself. It will be seen that Mr. Coats' opinion on Chapter VIII of the Report, which deals with the "Scheme of Economic Survey—Organization", is both definite and unequivocal. As our readers are aware, this chapter contains the outlines of the proposed scheme of survey and the opinion of an expert like Mr. Coats, ought to prove valuable to those who would dispassionately consider the Report and come to some practical conclusions. Mr. Coats states that "Chapter VIII of the Report, however, seems to me to be excellent as a statement of principle." Another point to note about Mr. Coats' letter is then as regards Professor Burnett-Hurst's note of dissent, he thinks that he is "more conservative than the majority of the Committee", and adds, that "he agrees as to the method by which the general problem of statistics should be attacked". Mr. Coats elucidates the matter when he remarks:—"That there may be difficulties in creating a statistic for India that are absent in other countries should not, I think, militate against a thorough exploration of what is possible, and has, in my judgment, can only be well done by an authority which is not only competent, but has also an omnibus purview and mandate." This is exactly what the majority Report adumbrates and the opinion of so competent an authority as Mr. Coats ought to settle the matter for good for most people who are prepared to be guided by a dispassionate expert opinion on a matter of this kind.

Mr Coats' Letter.

We give below the text of Mr. Coats' letter, which though short is both suggestive and informing:

DOMINION BUREAU OF STATISTICS.

Ottawa, 22nd June 1926.

Dear Sir,

I duly received your letter of April 6 (Your Reference 490), and though I have since read through the report of the Economic Enquiry Committee I regret that I have been unable to give it the consideration necessary to render an opinion on points of detail of value. Chapter VIII of the Report, however, seems to me to be excellent as a statement of principle.

That there may be difficulties in creating a statistic for India that are absent in other

countries should not, I think, militate against a thorough exploration of what is possible and this, in my judgment, can only be well done by an authority which is not only competent but has also an omnibus purview and mandate. I note that though Professor Burnett Hurst is more conservative than the majority of the Committee as to the possibilities of statistical enquiry in India, he agrees as to the method by which the general problem of statistics should be attacked.

In Canada, as you know, we have a central statistical authority responsible for the general content and method of statistics, but operating largely in co-operation with executive departments, Dominion and Provincial. Perhaps the enclosed leaflet (especially pages 2 and 3) might be of some interest to you in case the discussion is still in the stage where outside experience may be of value.

I am,
Yours faithfully,
R. H. COATS.
Dominion Statistician.

[As regards the leaflet mentioned in para 3 of his letter, we are publishing the same below for the information of our readers. As we have before this remarked in these pages, the Canadian plan of statistical organization is one worthy of close attention in this country at this particular moment.—*Ed.*]

The Canadian Plan of Organization of Government Statistics.*

By R. H. Coats, Dominion Statistician of Canada.

The Canadian plan of statistical organization is that of centralization. In 1918 the Dominion Bureau of Statistics was created (under the "Statistics Act") and made responsible for the statistics "relative to the commercial, industrial, social, economic and general activities and conditions of the people" practically a universal mandate. It was recognized that certain statistics must originate in, or can best be collected through, particular departments, or in fact can best be interpreted and issued by such departments. To meet this situation and to insure that statistics serve departmental requirements as well as those of general policy the Act enjoined collaboration between the Bureau and the several departments, under the following machinery: First, the Dominion Statistician, as chief of the Bureau, has standing access to heads of departments for conference purposes. Secondly, he is under instruction, on any point of statistical procedure involving departmental interests, to submit a *modus vivendi* between the Bureau and the department in question for the consideration of the Cabinet. Such recommendation, on approval, constitutes a permanent arrangement governing the particular subject. Thus, should dispute arise, it is settled by the body representative of all interests, especially those involving interdepartmental relations. In the working out, most of the purely statistical operations of the Government have been brought under the immediate direction of the Bureau of Statistics, whilst the rest are governed by a series of specific agreements arrived at by the process indicated.

In Canada, as in the United States, Government is on a federal basis, and several highly important functions are exercised by the Provinces. Co-operation accordingly must be worked out between the Bureau of Statistics and Provincial departments. Provision for this is made in a special clause of the Statistics Act which permits provincial officers to act as agents of the Bureau, and also gives the Bureau access to provincial records.

The work that has been organized to date under the Bureau of Statistics covers: (1) Demography, including (*a*) The Census, (*b*) Vital Statistics and (*c*) Statistics of Migration; (2) Social Statistics, *e.g.*, criminology, education; (3) Production Statistics, including (*a*) agriculture, (*b*) fisheries, (*c*) forestry, (*d*) mining and metallurgy, (*e*) water powers and central electric stations, (*f*) general manufactures, and (*g*) construction; (4) External Trade—imports and exports; (5) Internal Trade—marketing of grain, live-stock, animal products, etc.—cold storage,—prices, wholesale and retail; (6) Transportation and Communications—railways, tramways, express companies, shipping, telegraphs, telephones; (7) Finance—Dominion, Provincial and Municipal—currency, banking, interest, exchange, security prices, etc.; (8) General—The Year Book of Canada, Barometrics.

The purposes of statistical centralization

* Summary of paper presented at the meeting of the Committee on Governmental Labour Statistics of the American Statistical Association in Chicago, 27th December, 1924. (Reprinted from the *Journal of the American Statistical Association*, March, 1925.)

include the economies in overhead, as in staff, equipment, library, administrative systems, etc., which organization usually permits. The convenience of the public is promoted through the reduction of questionnaires and the setting up of a central information agency. Statistical experience is concentrated and enhanced in value. The fundamental purpose however, lies in the fact that the great subjects of statistics, such as production, trade finance, population, are not separate and distinct, but are inter-related. Phenomena common to different fields must be treated in the same way throughout. The classification of commodities, for example, is made on the same principle, whether for production statistics, trade statistics, or price statistics, similarly with the classification of occupations, whether for the census, vital statistics, immigration statistics, or social statistics in general.

A concrete example of the manner in which this organization works out may be given. There are between three and four thousand factories making butter and cheese in Canada. Small individually, in the aggregate they constitute an important industry. They are under provincial jurisdiction, each Province having a Dairy Commissioner, whose staff inspects, instructs and generally supervises their operations. In addition there is a Dominion Dairy Commissioner, whose functions largely relate to inter-provincial and export trade. Previous to 1918, most of these Provincial Dairy Branches collected and issued statistics. They did it by a variety of methods on such points as classification of products, fiscal year, etc. Hence, if a comparative view, or a Dominion total, were desired, the work had largely to be done over, or approximate results accepted. Subjects in which a Dairy Commissioner as such is apt not to be interested,—for example, the analysis of capital, labour conditions, fuel consumption, power equipment,—were for the most part omitted, so that if a Finance Department, Labour Department, Fuel Controller or Water Power authority desired to know the bearing of the dairying industry from their particular standpoints they had to find it out for themselves, incidentally duplicating overhead.

Under the present scheme the Bureau of Statistics, the Dominion Dairy Commissioner and the nine Provincial Dairy Commissioners have joined forces. A form for annual data has been agreed upon that will collect all the information that the several governments require. The Bureau prints and supplies this form, thus ensuring standardization. The duty of collection is assumed by the Provincial Departments; that of compilation and publication by the Bureau. The results as compiled are at once handed to the several Provinces, for use in any way they may think proper. The Bureau, however undertakes to publish a report for the whole Dominion, which report is edited by the Dominion Dairy Commissioner. The data on labour, water power, fuel consumption, etc., are simultaneously made available to the departments interested. They are united, however, in the Bureau with similar materials similarly collected throughout the field of production.

In vital statistics, where the nine Canadian provinces once operated under nine distinctive acts, with nine different series of schedules for collecting the information, we have now agreed upon uniform methods, with collection by the provinces and compilation by the Bureau, the latter bringing out a Dominion report, prepared in consultation with the Federal Department of Health. There are, of course, numerous subjects, which lie outside the possibility of arrangements of this kind. Here the Bureau works independently though all such action is in principle complementary and supplementary.

A special word as to organization of labour statistics is in order. It goes without saying that such statistics should be carried out in the closest association with those of general, social and economic conditions. First, all questions appertaining to labour conditions in the censuses of population and of industry are framed in consultation with the Department of Labour. The census is the great stock taking of the nation, the background against which nearly all other statistics are projected. More specifically, the questions of the Census of Population dealing with occupations, earnings and unemployment, and the questions of the Industrial Census (annual) dealing with such points as the number and classification of employees, wages and salaries, hours of operations, etc., are thus discussed and their relative place in the general scheme determined. Secondly, those labour statistics which are collected by the method of continuous observation are the subject of special arrangement between the Labour Department and the Bureau. These include more particularly the statistics of strikes, the statistics of prices and cost of living, the statistics of wages, the statistics of employment and unemployment, and the statistics of industrial accidents.

The statistics of strikes are handled entirely in the Labour Department, a leading function of which in Canada may be described as the maintenance of industrial peace. In publication of these statistics, however, the Labour Department follows the Bureau's industrial classification and in general insures co-ordination on important points of method. On the subject of prices and cost of living, the Bureau of Statistics publishes the official monthly index number of wholesale prices. On retail prices, it also collects a series from selected dealers in towns of 10,000 or over; simultaneously the Department obtains a return from its representatives in the same towns; these two series are amalgamated and the Department analyzes the results and publishes them in the *Labour Gazette* (monthly), adding certain data as to rentals and generally covering the price situation from the cost of living standpoint. The Bureau publishes the annual official report on prices. Rates of wages are handled almost entirely in the Department of Labour. On the subject of employment statistics, the Bureau issues a monthly index number of employment based on returns received from employers of twenty hands and over throughout Canada. This is carried out in association with the Industrial Census. The Labour Department publishes these data in the *Labour Gazette*, with a return of unemployment which it collects monthly from trade unions and a statement of applications received and placements made by the Employment Service of Canada, which is administered by the Department.

As already stated the final objective of the Bureau of Statistics is the publishing of a national conspectus, of which two leading vehicles of expression exist. The first is the official Year Book of Canada. Here is utilized the complete scheme of co-operation between the Bureau and other Departments (over 40 in number) of which examples have been furnished, with the addition of such special studies as are essential to a well-rounded scheme. The second chief use of statistical synthesis is in the measurement and interpretation of the current economic trend. The Bureau prepares the essential raw materials for this task, based on wide observation and experimentation, and maintains such analyses as enable it to act as advisor to the government, and in a limited way to the public.

No office of this kind, of course, can be conducted on a scale to meet all emergencies, but it can maintain a basic plan and organization capable of instant expansion, so that loss of time, duplication and confusion under an emergency may be avoided. And at the end of an emergency it can demobilize to advantage, retaining the essential and preserving the experience. It would be futile to say that only plain sailing is encountered in a programme like that which has been outlined. Co-operation is always a disagreeable shibboleth. Between departments through the Cabinet, it is necessarily somewhat unwieldy and slow. The bringing together of expenditures upon statistics into a lump also imposes criticism that is silent when the same are tucked away in the holes and corners of a budget; as a result, it is difficult to obtain recognition of the magnitude of the task and the need of the highest type of technical assistance. Difficulties like these, however, are calls to action and propaganda rather than to discouragement; they can be overcome by improved constitutional machinery and by the education of the people.

Brown and Pressed Glass.

The chief articles made by the factories at Naini, Bahjoi, Shikohabad and Balawali in the U. P. are chimneys, bottles, science apparatus, tubes, rods, etc. The Paliwal Glass Works of Shikohabad were re-organized during the year under the guidance of a Japanese expert and started manufacturing tumblers, bottles, chimneys, etc. But this branch of the industry like the one at Firozabad was carried on under great difficulties and disadvantages owing to the dumping of German and Japanese manufactures and the unfavourable rates of railway freights. It is complained that though Calcutta is 500 miles more distant from Karachi than Allahabad is from Karachi, the railway freight on manufactured goods between Karachi and Calcutta is Rs. 1-10-0, while the freight between Allahabad and Karachi is Rs. 2-11-0. The grievances of glass manufacturers were brought to the notice of Mr. G. G. Sim, Financial Commissioner, Railways, when he visited Cawnpore. A sub-committee of the Board of Industries was appointed to go into other difficulties of glass workers and to suggest ways and means of placing the industry on a flourishing footing.

Co-operation in India and Abroad.

By Christopher Hay, M.A.

Prof. Gide's Review of Co-operation in Europe.

There are to-day 200,000 co-operative societies in the world; but if we confine ourselves exclusively to Distributive Societies, we have to-day 80,000 societies with 30 million members. If we compare the 28 States of Europe, we see the co-operative proportion of the population varying from 1% in Spain to 40 or 50% in Denmark and Finland. Outside Europe co-operation is still in its infancy. Of the 22 States which constitute the two Americas, there are so far only a few which are at all co operative—the United States, Canada, Mexico and in South America, only the Argentine Republic. In Asia there are only three States and three nations in which it is to be found, Japan, India and Palestine. The two great Dominions of Australia and New Zealand both have co-operative societies. In Africa only North Africa, that is to say French Africa, and the extreme South of Africa, that is to say English Africa with the Cape, have a few co-operative societies.

India.

Madras.—The Report on the working of co-operative societies in Madras during the year 1924-25 shows an increase in the total number of societies from 9,785 to 11,141. The total membership at the end of the period stood at 6,90,740 and the total fund employed in the movement was Rs. 50,893 lakhs.

C.P. and Berar.—On the 30th of June 1925 there were in all 1,364 societies with a total working capital of Rs. 3,77,47,243. The total number of societies had fallen by 282 during the period. There was a decline in net profits earned during the year from Rs. 3,66,994 to Rs. 3,38,564 due to reduction in interest rates and contraction of the movement in the Central Provinces. The Government Report states that the centre of gravity is shifting from the Central Provinces to Berar.

Hyderabad.—Co-operative societies in the Nizam's Dominions numbered in 1923, 1,556 societies with a membership of 40,263 and a total working capital of Rs. 98,85,868. The amount of working capital available per member in the agricultural societies was Rs. 164. The societies owned 30.2% of their working capital.

Canada.

Co-operative Wheat Marketing.—Wheat marketing on co-operative lines is a young venture in Canada. Co-operative marketing has grown very rapidly in three prairie provinces of Canada—Alberta, Manitoba and Saskatchewan. At the end of 1924 these three provincial pools completed their commercial organization by creating the Canadian Co-operative Wheat Producers to function as a common sales agency. It was through this agency that the crop of the provincial pools was handled, *i.e.*, 81,399,882 bushels.

A Co-operative Educational Programme.—The Canadian corn-growers have not at the same time forgotten the necessity of enhancing the co-operative spirit in speedily growing associations. The Saskatchewan Grain-growers' Association has prepared a winter educational programme for the use of local farmers. The suggested studies for debates include among others the following:—

(*i*) There is no service under the capitalist system which could not be rendered more effectively under co-operation.

(*ii*) Co-operation offers more hope for the producers than socialism.

(*iii*) Can society be organized on a non-political basis?

(*iv*) The principles of co-operation should be taught in the primary and secondary schools and Universities of Saskatchewan.

Holland.

Model Co-operative Dairies.—Holland stands to-day in the first rank as a dairying country. The climate of Holland is of course a great help to the Dutch farmer. But more than anything else the industry and intelligence of the Dutch farmer are to be thanked for the model co-operative dairies of Holland. All children in Holland receive a sound primary education followed by a system of vocational teaching combining practical instruction in agriculture with a knowledge of the elementary principles of agricultural science. The average size of farms in Holland ranges from 5 to 30 acres, except in Friesland where the normal size is perhaps 80 acres. The Dutch people have a passion for extreme cleanliness which extends to all the operations of dairying:—clean byres, clean cows, clean milkers, clean utensils, and clean milking and handling of milk. There are 900 creameries of dairy factories, 686 of which are co-operative. The organization

of the dairy industry is efficient and progressive.

SWITZERLAND.

There are few countries in which Co-operation is so varied and where its development has been so rapid. Co-operative organizations are all structures which have their origin in the century old democracy, which represents the basis of the historic development of Switzerland. There were, in 1924, 11,000 co-operative societies, the place of honour regarding number being occupied by Dairies, Cattle-breeding Societies and Consumers' Societies. Of the 880,000 families in Switzerland, 360,000 are co-operatively organized and the average amount of purchases per family is 775 francs. Practically every village with a population sufficiently numerous to permit the organization of a society, has been won for co-operation.

RUSSIA.

Labour Artels—A Special Type of Institution. —A special type of Co-operative institution, Labour Artels, has sprung up in Russia and is described by the Soviet Government as "associations of persons set up for the joint organization and performance of physical and intellectual work, the material for which is supplied as a general rule by the employer." One of the essential features of Labour Artels is that they accept responsibility. The membership varies from 4 or 5 to 200 according to the work to be done. All members have the same rights and duties. They appoint one of their number as leader, to act as their representative. He is elected for six months or a year and is generally the best worker or the oldest member. The Artels are founded on the old ideal of common service and common sharing of profits. The total pay is generally divided equally, but in some cases the leader or the best workers receive a bigger share. The Revolution since 1917 has severely affected the Artels, the standard of morality has dropped and they no longer offer the same guarantees as the old Bourse Artels.

GERMANY.

The German Co-operative movement has made rapid progress during the last ten years. In 1914 the total number of co-operative societies was 34,568 with a membership of 6,275,151. On January 1st, 1926, the total number of societies was 52,788 and the membership stood at least 10,000,000. The oldest and the largest group of German Co-operative Societies are the credit societies. The other groups are: Industrial Producers' Societies, Agricultural Producers' Societies, Consumers' Societies, etc.

Outturn Handicap.

An examination of the problem showed that in India the sugar industry was handicapped by the fact that the outturn was ridiculously low over the greater part of the cane-producing area. The yield per acre was about one-third that of Cuba, one-sixth that of Java, and one-seventh that of Hawaii. The low acreage yield was partly due to the poor quality of cane being grown, and, until that yield was substantially increased by introducing improved varieties, little progress could be made. The Coimbatore cane-breeding station was entrusted with the task of evolving better varieties by crossing and selection. In starting this research station the Government of India was now taking advantage of the ripe experience of other cane-growing countries, where it has been conclusively proved that cane-breeding undertaken in the country itself is the only way of raising materially the standard of production.

Over the greater part of the area in which cane is grown in India the crop rarely sets seed; but at Coimbatore canes flower and seeds set freely. Within the short space of five years from the date of opening the station a large number of selected cross-bred seedling canes raised on this station were in fact available for trial in the provinces. In some cases grasses allied to cane and belonging to the same genus have been used as parents with a view to introducing vigorous growth, disease resistance and other desirable qualities in the cross-bred seedlings. The first batch of selected seedlings was tried on Government farms in the provinces in 1918. Of these seedlings, Nos. 205, 210, 213 and 214 have done exceptionally well; their yields have exceeded those of the local varieties usually grown by anything from 50 to 100 per cent. The Coimbatore cane-breeding station has also been able to produce early maturing canes. Such early maturing kinds are likely to meet a long felt want in tracts where there are sugar factories and where it is desirable to extend the period of crushing by growing early, medium and late varieties.

The existing depression tends to produce undue pessimism.—*Professor W. R. Scott.*

Economic Notes from London.

The Budget.

London, 1st June, 1926. The salient features of Mr. Churchill's second Budget have little in common with those of his first. Last year he was able to announce some remission of taxation; not large but none the less welcome, but this year we have instead new taxes and re-arrangements of existing ones to enable him to make the Budget balance and yield a surplus large enough for contingencies. Judged as a method of meeting a complex financial situation it is impossible to have anything but praise for the Budget, but it is the total that gives cause for criticism. Mr. Snowden's Budget totalled £795,000,000, but we have an estimate of expenditure of £820,641,000, which makes it evident that, allowing for additional expenditure in various directions, not much has so far been accomplished in the direction of economy. As I have previously pointed out to effect economy on our present expenditure is no easy matter, and it is rendered more difficult by the captious conduct of the Opposition. As someone remarked in the course of the recent debate on the Economy Bill, that measure afforded the critics full scope so that those who normally could not hit a hayrick were scoring bull's eyes. I merely advert to this to illustrate the overwhelming difficulty of pursuing the path of economy, yet there is no question that the expenditure must be reduced substantially. The most hopeful part of Mr. Churchill's speech was that in which he dealt with the repayment of debt. On March 31 the total floating debt stood at £704,250,000 as compared with £1,412,000,000 on the same date in 1919, while our nominal deadweight debt stood on March 31 at £7,616,000,000, a reduction of £30,000,000 having been effected during the year. It is a ground for criticism in some quarters that we are trying to do too much in the direction of debt repayment, and that it would be better to leave more of the burden for posterity and gain ourselves by more remissions of taxation. But there is to my mind no question that the course being pursued is the right one, provided that the savings in annual interest are not frittered away on the expansion of what is known as social services which ought to wait until the nation is once again in a position to undertake additional obligations.

Bankruptcy Law Reform.

The business world will be relieved to learn that the Lord Chancellor has introduced a Bill in the House of Lords. The real basis of the desire for reform in the Bankruptcy Act is the prevalence of what are known as "long firm" frauds, which are discreditable to the country. Our readers are familiar with the procedure adopted by the gentry who practise this particular form of flagrant dishonesty. In brief, they endeavour to disarm suspicion by carrying out honestly a number of comparatively small transactions. When confidence has thus been established they place a large order for goods which they promptly sell for cash at something below their true value, and when pressed for payment the long firm decamps or becomes bankrupt. Matters became so serious in the woollen trade at one time that the Association of British Chambers of Commerce appointed a very influential committee, under the chairmanship of Sir James Martin, to investigate the subject, and a Bill on behalf of the Association was introduced in the House of Commons by Mr. A. M. Samuel. Mr. Sydney Webb, at that time President of the Board of Trade, was so much impressed by the representations made that he agreed to appoint a Government Committee to consider the whole question and to report what amendments in the Bankruptcy Act of 1914 recent experience had shown to be desirable. This prompt action on the part of the Government certainly encouraged the belief that something would be done if the report of the Committee showed that it was necessary. In fact, the Government Committee, of which Mr. E. W. Hansell was Chairman, and Mr. Samuel, Sir James Martin, and others were members, found so little room for difference of opinion that to all intents and purposes their report was unanimous; and it is important to recall that Mr. H. F. Carlill, Inspector-General in Bankruptcy, was one of the signatories.

The report made it absolutely clear that amendment of the Bankruptcy Act was urgently necessary in order to put a stop to a form of fraudulent trading which has been carried on largely by aliens, especially in the City and the East End of London. The Committee did not entirely absolve the business community of all responsibility. It mentioned instances of credit being given to a surprising extent without any adequate inquiry as to the standing of the firms concerned. But, however much one may deplore this want of proper precaution, it constitutes no excuse for

dishonesty, and the Committee suggested a number of alterations in the law with the object of punishing systematic operations entered into with the deliberate object of fraud. Among other suggestions it was proposed that acts and defaults of a debtor which are criminal offences if committed within six months before the presentation of a bankruptcy petition, for which a receiving order is made, should be made criminal offences if committed within 12 months before the presentation of such a petition. It was proposed to make failure to keep proper books of account a criminal offence in the case of a first bankruptcy, though it was suggested that there should be no prosecution for failure to keep proper books until two years had elapsed after the passing of the Act, nor if the liabilities were less than £500. The Committee recommended that Courts of summary jurisdiction should have power to inflict up to 12 months' imprisonment for a bankruptcy offence instead of only six months as at present. The Larceny Act of 1916, which deals with obtaining property by false pretences, provides for a maximum punishment of five years' penal servitude, and the Committee proposed that a similar punishment should be prescribed in certain classes of fraudulent bankruptcy.

Nor did the Committee shrink from considering the position of persons who buy new goods at a price so low that they must be aware that the seller has no intention of paying for them, and a recommendation was made that it should be a criminal offence to receive property unlawfully obtained by fraud. The Committee suggested that the Court of Bankruptcy should have the power to recommend alien bankrupts for deportation after public examination, and most people will agree that those who abuse the hospitality of this country by defrauding its inhabitants do not deserve to enjoy British domicile.

Measles from Lettuce.

A highly interesting theory concerning the origin of all infectious diseases which affect humanity has been propounded to the Academy of Sciences by Professor D'Arsonval who is widely known for his research work on the cancer problem. According to the Professor, the bacilli of all infectious diseases are now identified, and he has found that they all have their origin in various kinds of foodstuffs which have become slightly mouldy or musty. A lettuce when slightly musty harbours the germ of measles, musty potatoes convey small-pox, and foot and mouth disease, scarlet fever and rabies are conveyed in carrots, Malta fever in oranges and lemons, paratyphus in wheat and rye, diphtheria in barley, and typhus in oats. The Professor, having pointed out the possible dangers of all these common foodstuffs, added the reassurance fact there was little to be feared so long as none of them were eaten raw, since cooking usually destroyed their maleficent properties. And, furthermore, all these things were safe enough when perfectly fresh. It was in a state of mustiness that they began to harbour deadly germs. It is suggested, however, that diphtheria might be effectively fought by eradicating barley from children's food and by ceasing to employ barley straw as bedding for dairy cows. The ravages of small-pox might be similarly reduced if care were taken that the potatoes figuring on the family menu were above suspicion of mouldiness.

A Biography of the Premier.

It has often been said that it is the day of trial which reveals the man, and never has that adage been more truly proved than in the case of Mr. Stanley Baldwin, the present Prime Minister. However the rest of the world may have emerged from the test of the General Strike, Mr. Baldwin has beyond all question come through it with his public reputation and his personal popularity incalculably magnified. All shades of political thought combine in appreciation of the grit and integrity with which he faced the situation. The fact that a reconciliation was so speedily effected was largely due to the confidence which both parties placed in Mr. Baldwin's word and in Mr. Baldwin's character. Throughout his career the guiding influence of his life has been a sense of character, and it is that which has raised him to his present height of universal esteem. It is some three years ago that he said in a speech at Worcester: "I have but one idea, which is the idea I inherited, and it is the idea of service—service to the people of this country.....it makes very little difference whether a man is driving a tramcar or sweeping streets or being a Prime Minister, if he only brings to that service everything that is in him and performs it for the sake of mankind." It is this spirit, so fully borne out by his own action, that makes the Prime Minister understood and appreciated by the man who drives a tramcar or who sweeps the street.

There has not hitherto been any authoritative biography of Mr. Baldwin, who has indeed as assiduously avoided the arts of publicity as some conspicuous politicians have wooed them,

Messrs. Chapman & Hall, in announcing the publication of a brief but searching biographical character study of the Prime Minister from the pen of Mr. Adam Gowans Whyte, who has enjoyed especial opportunities for gathering information hitherto unrevealed to the public, meet accordingly a public want. In order to ensure the enormous circulation which such a book invites at the present time, this biography is being published at the popular price of 5*s.* net, although it contains many unique portraits. It is a people's book, addressed to the people, in appreciation of a friend of the people. The publishers confidently commend it to the attention of the public.

Readers who are unfamiliar with the details of Mr. Baldwin's parentage will be interested to discover that he owns on his mother's side the same grandfather as Mr. Rudyard Kipling. The daughters of that branch of the Macdonald family made a series of brilliant marriages. Alice, the eldest, married J. Lockwood Kipling, and became the mother of the laureate of Empire. Georgiana married Sir Edward Burne-Jones; Agnes married Sir Edward Poynter; and Louisa married the father of the present Prime Minister, who was of a Quaker strain. The Baldwins established their iron founding business in Worcestershire about one hundred and fifty years ago, and though its trade developed with great rapidity, it never lost its intimate family character. The employer knew all his workmen by name, and took a personal interest in their industrial welfare and in their home life. Mr. Stanley Baldwin has, therefore, been accustomed from his youth up to study the conditions of labour from the inside, and to sympathize both with the workmen's and the masters' point of view. At Harrow and Cambridge Mr. Baldwin was not one of those pushful people who work themselves into a spurious reputation. He did not seek academic distinctions, nor was he the man to advertise himself among his contemporaries. He entered the business of his father at the age of twenty-one, and devoted himself for twenty years to its development. He has described himself as a "full-timer," who has been through the mill. His public spirit is well exemplified by the fact now for the first time made known that it was Mr. Baldwin who wrote the letter in *The Times* of June 24th, 1919, over the initials F. S. T., which contained the following significant passage, advocating and himself undertaking, a voluntary levy with a view to relieving the position of the less fortunate taxpayer. Mr. Baldwin wrote:

"I have been considering this matter for nearly two years, but my mind moves slowly; I dislike publicity, and I hoped that someone else might lead the way. I have made as accurate an estimate as I am able of the value of my own estate and I have arrived at a total of about £580,000. I have decided to realize 20 per cent of that amount, or, say, £120,000, which will purchase £150,000 of the new War Loan, and present it to the Government for cancellation."

Unfortunately the average man proved less patriotic than the Prime Minister. Only about half a million War Loan was cancelled in this way, but a fine example is never wasted.

Mr. Gowans Whyte's Biography is full of bright personal touches, and presents a fresh and manly portrait of a typical Englishman. A concluding chapter dealing with Mr. Baldwin's conduct of the General Strike brings the record up to the last week before publication.

A Book on I.C.S.

Sir Evan Maconochie, K.C.I.E., C.S.I., has recently retired, full of honours, from the Indian Civil Service, and he has devoted some of his leisure to the preparation of a volume of Reminiscences. His book is much more than a chatty record of experiences; for, although it is full of anecdotes and pen-portraits, it goes also a long way towards providing the young aspirant for distinction as a Civil Servant with a wise and detailed account of the difficulties and opportunities that lie before him. Sir Evan is a whole-hearted supporter of Lord Curzon's policy, and gives a particularly vivid account of that great Viceroy's achievements. The many striking illustrations include several beautiful water-colours by Lady Maconochie, who was a daughter of Sir Evan's former chief, Sir Denzil Ibbetson. A fine picture of Sri Krishna Raja Wadiyar, the present Maharaja of Mysore, is also to be seen in it. The volume is issued by Messrs. Chapman & Hall. In view of Sir Evan's former connection with Mysore, this volume ought to prove interesting on your side.

Census of Agriculture, Canada.

The Canadian Dominion Bureau of Statistics has issued a limited number of copies of Volume V of the *Report on the Census of Canada* 1921, containing the data collected in respect of agriculture. The report gives information in regard to areas under crop, size and tenure of farms, condition of farm land and value of farm property, as well as values of farm products, including field crops, fruit, and livestock,

Economics in the West.

The British Budget.

London. 1st June 1926.—The second budget put forward by the present Government was introduced by Mr. Winston Churchill on April 26. Events in the industrial and political world since that date have tended to overshadow the proposals contained therein, but in any case the announcements were not spectacular. The budget was more or less orthodox in structure and in detail, with few departures of far-reaching importance from the fiscal and taxation system already in force. The House of Commons has passed the resolutions arising out of the budget and has accorded a second reading to the Finance Bill.

Financial Year 1925-26

The results for the past financial year were conspicuous for substantial excesses over estimates on both sides of the account. Unfortunately, while the expenditure, due largely to the coal subvention and to higher consolidated fund services, was nearly 26¾ millions above the estimates, revenue was only eleven millions higher than anticipated. Consequently, despite windfalls from higher returns from sundry loans and miscellaneous receipts, a surplus originally estimated at something under 2 millions was converted by unforeseeable circumstances into a deficit of 14 millions. This deficit is more than accounted for by the coal subsidy, which swallowed up 19 millions in the last financial year. It was met by drawing on National Savings Certificates Investment Account, an operation which was tantamount to a reduction in the national assets. As against this deficit, however, must be set the fact that the statutory 50 millions was applied to debt redemption, so that it cannot properly be said that the Government failed to pay its way in the year 1925-26.

National Debt

The nominal amount of the gross deadweight debt declined by only 30½ millions as a result of the year's operations, despite the application of 50 millions to debt redemption, the difference of 19½ millions being attributable to the issue of the Conversion Loan at a substantial discount. Of the net reduction 11 millions was on account of external and 19½ millions on account of internal indebtedness. Debts due to Allies on March 31 amounted, at par of exchange, to 136 millions, the debt to the United States to 931 millions, and other external debts to 44 millions; but against these items must be set obligations of Dominions and Colonies amounting to 128 millions, funded debts due from Allies and others in respect of war, relief, reconstruction and other loans, aggregating 330 millions, and unfunded debts of the same category totalling 1,534 millions. Of the last amount 647 millions is owing by France and 795 millions by Russia, and of the funded debt 275 millions is due from Italy.

The appropriations to sinking fund last year included 25½ millions on account of statutory sinking funds and 7 millions resulting from payments of death duties in scrip. In addition 7½ millions was applied to War Loan Depreciation Fund. Under the Finance Act of 1917 it was laid down that if the 5% War Loan fell below its issue price of 95 or the 4% below par, one-half of one per cent per month was to be applied to a depreciation fund until a sum of 10 millions had been accumulated. Only in the case of the 4% Loan did the market price fall below the prescribed level during the year, and in view of the relatively small amount outstanding it is difficult to account for the large addition to the fund. Apart from the three items mentioned, a residual sum of 10 millions was issued to the National Debt Commissioners to redeem debt.

Comparison of the external and internal debt figures for recent years is made below:

Gross Deadweight Debt

	External Debt*	Internal Debt	Total
	£	£	£
March 31—			
1914..	—	649,770,000	649,770,000
1915..	—	—	1,104,967,000
1916..	—	—	2,133,148,000
1917..	—	—	4,011,446,000
1918..	—	—	5,871,851,000
1919..	1,364,850,000	6,070,099,000	7,434,949,000
Dec. 31—			
1919..	1,300,000,000†	6,700,000,000†	7,998,000,000†
March 31—			
1920..	1,278,714,000	6,553,030,000	7,831,744,000
1921..	1,161,563,000	6,423,847,000	7,585,410,000
1922..	1,088,670,000	6,587,625,000	7,676,295,000
1923..	1,155,653,000	6,616,743,000	7,772,396,000
1924..	1,125,813,000	6,554,810,000	7,680,623,000
1925..	1,121,600,000	6,524,771,000	7,646,370,000
1926..	1,110,778,000	6,505,133,000	7,615,911,000

* At par of exchange. † Approximate figures.

Expenditure, 1926-27.

The aggregate expenditure for the current year is estimated at a figure below that for 1925-26. Apart from coal, the civil services are calculated to absorb 6 millions more, but

2¾ millions less is set aside for the fighting forces. As against 19 millions last year, only 4 millions is provided for the coal subvention, though this does not allow for any further assistance which may be granted as part of the settlement yet to be reached. The most interesting feature of this side of the account is the increase in the sinking fund allocation by 10 millions to 60 millions. The theory behind this addition is that in view of the deficit last year the true appropriation to debt redemption fell short of the statutory requirement. It must be repeated, however, that the deficit was met not by borrowing but by realization of assets.

The Chancellor, in his budget speech, suggested that some economies might be found practicable during the present year. He also emphasized, however, the possibility that a protracted industrial dispute might necessitate substantial additions to expenditure and taxation. Fortunately the general strike lasted only long enough directly to involve the Government in extra outgoings, not included in the table set out below, estimated at £750,000, but there is no telling what the cost of a long continuance of the coal stoppage may amount to in lessened revenue, particularly next year, and possibly in increased disbursements.

Expenditure (000 omitted)

	1913-14 Actual	1925-26 Actual	1926-27 Estimates
National Debt Services:	£	£	£
Interest, etc.	16,894	308,229	304,000
Sinking Funds, including capital of Terminable Annuities ..	7,606	50,000	60,000
Total Debt Services ..	24,500	358,229	364,000
Road Fund	1,395	17,455	17,500
Payments to Northern Ireland Exchequer ..	—	4,861	5,200
Payments to Local Taxation Accounts, etc. ..	9,734	14,454	14,100
Land Settlement ..	—	779	—
Other Consolidated Fund Services ..	1,694	2,372	2,600
Consolidated Fund Services	37,323	398,150	403,400
Fighting Forces:			
Army	28,346	44,250	42,500
Navy	48,833	59,657	58,100
Air Force	—	15,470	16,000
Fighting Forces ..	77,179	119,377	116,600
Civil Services:			
Education	18,592	46,038	50,730
Health	7,006	23,002	21,017
Labour	218	13,370	11,720
Ministry of Pensions ..	—	67,901	63,505
Old Age Pensions .. .	12,457	26,199	29,840
Coal Mining Industry Subvention .. .	—	19,000	4,100
Other Civil Votes .	15,628	47,753	53,345
Civil Services.. .	53,901	243,263	234,257
Customs and Excise .	2,431	4,770	4,920
Inland Revenue.. .	2,052	6,590	6,864
Post Office Services .	24,607	53,950	54,600
Total Supply Services.	160,170	427,950	417,241
Total Expenditure ..	197,493	426,100	820,641

REVENUE, 1926-27.

On the old basis of taxation, the revenue for the present year is estimated at 805 millions, but as a result of the budget announcements the figure is raised to 825 millions, thus leaving a surplus on the estimates amounting to 4 millions. Of the 20 millions, only 9 millions are due to changes in taxation. As a result of a non-definitive agreement with the French Government at least 4 millions is to be received from that source during the current year, and this is included in the item "receipts from sundry loans". In addition, 7 millions is to be taken for general purposes from the balance of 19 millions standing to the credit of the road fund. In the estimates of revenue as set out below no account is taken of the possible results, from the Exchequer's point of view, of the strike and the continued dispute in the coal industry.

Revenue (000 omitted)

	1913-14 Actual	1925-26 Actual	1926-27 On 1925-26 Basis of Taxation	1926-27 Budget Estimate
	£	£	£	£
Customs ..	35,450	103,487	107,700	108,450
Excise ..	39,590	134,560	134,300	141,300
Motor Vehicle, etc., Duties..	—	18,056	20,100	21,600
Estate, etc., Duties ..	27,359	61,200	66,000	66,000
Stamp Duties .	9,966	24,700	25,000	25,000
Land Tax and Mineral Rights Duty	3,415	950	1,000	1,000
Income Tax ..	43,929	259,411	255,000	254,800
Super-Tax ...	3,320	68,510	64,500	64,500
Excess Profits Duty, etc. ..	—	2,000	2,000	2,000
Corporation Profits Tax ..	—	11,670	6,500	6,500
Receipts from Taxes ..	163,029	684,544	682,100	691,150
Postal Receipts	21,190	35,750	36,500	36,500
Telegraph Receipts ..	3,080	5,650	5,600	5,600

	£	£	£	£
Crown Lands (net) ..	530	950	950	950
Receipts from Sundry Loans	1,580	14,944	17,650	21,650
Miscellaneous: Ordinary Receipts ..	2,304	17,349	18,600	18,600
Withdrawn from Road Fund ..	—	—	—	7,000
Special Receipts ..	—	36,925	26,000	26,000
Non-Tax Revenue ..	35,214	127,518	122,600	133,600
Total Revenue.	198,243	812,062	804,700	824,750

The changes in taxation are not drastic. With the exception of wines and spirits, all goods more than a hundred years old are exempted from customs duties, and the excise duty on chicory, involving a negligible sum, is repealed. An import duty of 16⅔ per cent *ad valorem* is now levied on packing and wrapping paper. In future new duties on commodities will be levied at the earliest practicable date after the introduction of the necessary resolution. This change is designed to prevent dumping between the announcement and the imposition of new customs duties. Part I of the Safeguarding of Industries Act, which affects the so-called "key industries" and which would otherwise lapse this year, is to be re-enacted, with slight modifications. The import duties of 1915, which were abolished under Mr. Snowden's budget and re-imposed last year, are extended, largely for simplicity's sake, to cover commercial cars. It is proposed to guarantee the existing rates of imperial preference on dutiable imported articles for a period of ten years. The largest addition to revenue on customs and excise account is obtained by shortening the period for the payment of excise duty on beer from three to two months. Thus thirteen instead of twelve months' revenue will be collected during the current year, bringing in 5½ millions beyond the original estimate. This enumeration exhausts the changes in existing duties.

Turning now to the motor vehicle duties and the road fund, in addition to taking 7 millions from the accumulated balance, one-third of the annual yield on private cars and cycles, representing a levy on the element of pleasure and luxury in motoring, will be taken for general purposes. This apportionment should amount in the current year to 3½ millions. An increase was announced in the tax on heavy vehicles, adding about 1½ millions to the yield originally estimated. Out of the total anticipated receipts of 21½ millions from motor vehicle duties, 17½ millions, the same amount as last year, will go to the Road Fund.

In the sphere of inland revenue, a clause has been inserted in the Finance Bill designed to bring to an end the uncertainty regarding outstanding liabilities on account of excess profits duty. This will close the chapter of financial history concerned with a tax repealed so long as five years ago. An important modification was also announced in the basis of income-tax assessment. The three years' average will be abolished, and tax under Schedule D will be assessed exclusively on the record of the preceding year. In order to allow for administrative readjustments, the change will not come into operation until 1927-28, so that it involves no revision in the estimate of income-tax yield for this year. It is calculated, however, that the Treasury will benefit next year to the extent of about 1½ millions, but it must be remembered that estimates of yield will be more difficult when only one year has to be taken into consideration than when the peculiarities of one may quite well be off-set to some extent by those of another. A further announcement affecting income-tax and super-tax was that concerning the agreement on double taxation, alluded to in the article on Irish Free State Finance. The result of this arrangement will be a loss to the British Treasury of £200,000 in the present year and £300,000 in subsequent years.

The only important new introduction was the excise duty on betting, which has aroused a good deal of mixed opposition and was the subject of investigation by a Committee set up three years ago. The duty is to come into force on November 1, and will take the form of a five per cent charge on legal bets made with a bookmaker, with the addition of annual payments of ten pounds by each bookmaker in consideration of a certificate permitting him to trade, and of ten pounds in respect of each set of premises used by him for receiving bets on credit. Race course cash betting will be taxed by a system of tickets, and credit betting on the basis of returns furnished by bookmakers. The yield this year is estimated at only 1½ millions, but in a full year at 6 millions. This tax is an innovation in these islands, but whether by arrangement, tacit or expressed, or by accident, it is being introduced almost simultaneously in the Irish Free State, so that this particular form of luxury will be liable to tax in the near future all over the British Isles, except in Northern Ireland.

Outlook for 1927-28

The Chancellor did not give much indication of his anticipations for future years. On the one hand, coal subsidy payments will not have to be allowed for in the estimates for 1927-28, and the sinking fund will revert to 50 millions. The betting tax will yield 4½ millions more and an additional 1½ millions will be received under the head of income-tax due to abolition of the three years' average. On the other hand, little can be hoped for from excess profits duty and corporation profits tax, while the 7 millions withdrawn from the road fund balance and the 5½ millions obtained by shortening brewers' credit are once for all levies which cannot be repeated next year. The payments in respect of the French and other external debts may be larger in the aggregate, though there appears to be no guarantee that the 4 millions from France will be repeated, failing any fresh agreement, in 1927-28. Consequently the outlook for substantial tax remissions next year cannot at the moment be regarded as hopeful.

Cure for Cholera.

The use of china clay or kaolin for the manufacture of porcelain has long flourished in the Orient, and since the eighteenth century centres at Limoges in France, and in Devon and Cornwall in England, have supplied many thousands of tons annually. Its use in medicine as an excipient for certain pills, as a dusting powder for ulcerated surfaces, and as a basis of a form of poultice has also been known for a long time. Of recent years the use of kaolin has been extended, however, and it is coming in favour for the treatment of certain intestinal infections. A discussion of its action in this respect formed the basis of recent thesis by Dr. L. H. Breadfladt, who had an opportunity for an extensive trial of its properties during the cholera epidemic in China which began in 1919. A hundred consecutive cases of cholera were selected, and divided into two groups according to their severity. Of these, 15 in the severely ill group and 20 in the moderately ill group received kaolin. It was given by the mouth in a heavy suspension consisting of 800 grams in a litre of water. If vomiting was a prominent symptom 3 ounces of this suspension was given every half hour. After the vomiting and diarrhœa had abated slightly, usually at the end of six to eight hours, the dose of kaolin was continued every hour and then every two hours. It was not found necessary to give it for more than twelve to fifteen hours in most cases. Of the 35 patients who received kaolin only 1 died, and she was unconscious on admission and had complete suppression of urine. Of the total of 100 patients, 41 received hypertonic salt solution only with 9 deaths, 24 received salt solution and kaolin with 7 deaths, while 33 received kaolin alone with 1 death. In the two clinical groups the mortality rate was 22 per cent in the severely ill and 6 per cent in the moderately ill, so the therapeutic use of kaolin in cholera appears to be justified. Certain experimental work gives a clue to the way in which kaolin acts. When mixed with cultures of bacteria in fluid media, incubated at body temperature, and kept in motion kaolin carries down with it as a precipitate large numbers of the organisms. If 25 mg. of the powder be mixed with one minimum lethal dose of diphtheria toxin this will fail to kill a guinea pig on injection. Toxic filtrates of cultures of the cholera vibrio standardized to kill rabbits in 2 doses by intravenous injection produce toxic effects when previously shaken up with kaolin. Dr. Braadfladt concludes, therefore, that kaolin does not act as an antiseptic, but carries with it large numbers of the bacteria in the intestine, while with regard to toxins it seems to render them harmless by a process of absorption. Experiments on normal individuals indicate that after kaolin has been taken by the mouth *B. Welchii*, for example, disappears almost completely from the fæces. It does not upset digestion, and it tends to reduce intestinal fermentation as evidenced by flatulence. It has been used in the treatment of bacillary dysentery, chronic ulcerative colitis, and acute enteritis with success, and it might possibly be beneficial in food poisoning by members of the salmonella group if given early enough. Dr. Breadfladt suggests that the use of kaolin in intestinal infections deserves an extended trial, says the *British Medical Journal*.

We still hold the unshaken belief that the sugar beet industry cannot survive in this country without a large subsidy or protection.—*Sir Ernest W. Tate* (Tate and Lyle, Ltd).

League of Nations.

Loan for the Settlement of Bulgarian Refugees.

Geneva. 11th June, 1926 The Council of the League of Nations, at its meeting of June 10, approved a scheme for the settlement of Bulgarian refugees, the general outlines of which had been drawn up by the Financial Committee.

In their report the Financial Committee stated that, in their opinion, the issue by the Bulgarian Government of a loan giving a net yield of £2,250,000 would be sufficient and that such a loan should be secured by a first charge on adequate specific revenues, for which the Committee propose the excises on salt and alcohol and the match monopoly which in the last completed year produced 19.7 million gold francs, or nearly £800,000. The scheme provides that these revenues should be paid into a special account controlled by the Trustees of the loan.

The Financial Committee also indicated that before such a loan could be issued it would be necessary:

(1) for the Bulgarian Government to arrive at a satisfactory agreement with the holders of bonds of Bulgarian pre-war loans and of pre-war Treasury bills;

(2) for the Reparation Commission (or the Inter-Allied Commission at Sofia) to make an exception from the general charge on Bulgarian State assets for reparation payments so as to give a clear first charge on the proposed revenues to the new loan;

(3) for the Reparation Commission to make an arrangement with regard to future reparation payments (such as, *e.g.*, the appointment of an arbitrator in case of difficulty) which, in the view of the Financial Committee, would protect the securities assigned to the loan against losing their value through instability of the currency.

Immediately after the Council resolution, the Bulgarian Government started negotiations on these points.

The proceeds of the loan will be placed in the hands of an authority or agent who will be appointed by the Council and who will see that the proceeds are only expended on the purposes for which the loan is raised. He will have the power to refuse releases of money to the Bulgarian Government if he is not satisfied on this point. The exact form of control will be established at the next meeting of the Council to be held in September.

In the event of the Bulgarian Government obtaining a temporary advance in the meantime, which should not exceed £400,000 but which would be of great value for the provision of seed, etc., for sowing in the early autumn, the Council has authorized its President to take any necessary measures which might be proposed by the Financial Committee. Such measures will include arrangements for a satisfactory supervision of the expenditure of the advance.

Ogale Glass Works.

We have received from the Ogale Glass Works a fine storm-proof Lantern, appropriately styled the Prabhakar (or The Sun), which is typical of the high class workmanship of this well-known Indian Glass Factory. Whether for its burning qualities or for its finish, it is impossible to praise it too highly. The glass industry in India is still in its infancy and deserves the close attention of the public—especially as the competitors with it are foreign firms with unlimited Government backing in their favour. The Ogale Glass Works deserve to be congratulated on their enterprize and ability in putting on the market a storm-proof of the splendid type they have sent us. We would bespeak for them the widest public support possible.

These lamps, we would add, are made wholly of brass and much superior in make-up to the tin ones commonly sold in the bazaar. They also show some improvements over the imported ones. Messrs. Ogale, who have been working under the patronage of the Chief of Aundh, are among pioneers in this field and we wish the best of good luck to them.

The only thing that can really put trade on its legs—coal, iron, cotton, woollen or whatever, it is—is hearty co-operation between man and employers.—***Lord Abercromby.***

If I believe that mine is the truth, I cannot tolerate the clandestine murmur, the little ambush, the calumny, the defamation.—***Signor Mussolini.***

Government Departments always seem to let one down.—***Mr. George Terrell.***

Canadian Trade and Finance.

Price Levels.

June 3, 1926.—At the present moment the position of the Canadian farmer is much more fortunate than that of the farmer in the United States, since the price of Canadian farm products is above the general price level, while the average price of United States farm products is below this level. For some months the whole trend of basic commodity prices has been downward in both the United States and Canada, and as usual raw materials have suffered more than finished goods. The Dominion Bureau of Statistics Index for 236 commodities in April was 160.6 against 163.8 for January, while the April Index number for Canadian farm products stands at 172.9. On the other hand, the United States Department of Agriculture Index shows that farm products in the United States stand at 146 as against a general price level of approximately 151. In both cases these index numbers are weighted in relation to the economic importance of the various prices going into the index. The prevailing low prices for corn and cotton go far to explain the low prices in the United States, while the high price of wheat, which is proportionately a much more important product in Canada, is a large factor in the prosperity of the Canadian farmer. The following table shows the index numbers of various Canadian products as compared with 1913 prices. 100 is taken to represent the average 1913 price. From this table and from the facts mentioned above the conclusion may be drawn that the balance between purchasing power and consumption is being maintained in better proportion in Canada than in the United States.

	1926			
	Jan.	Feb.	Mar.	April.
Farm products ..	173.0	167.5	163.2	172.9
Animal ..	149.3	147.2	146.1	138.0
Foods ..	173.2	170.8	169.0	169.3
Textiles and their products ..	187.9	185.9	182.8	175.9
Wood products and paper ..	159.7	159.8	157.3	156.9
Iron and its products ..	147.5	147.2	145.7	145.0
Non-ferrous metals and their products ..	105.9	105.0	105.7	104.4
Non-metallic minerals and their products ..	177.2	177.8	178.6	177.0
Building and construction materials ..	152.6	152.7	152.2	150.4
All commodities ..	163.8	162.2	160.1	160.6

For the first time in two years the monthly total of imports has exceeded exports, but Canadian export trade is running at high levels, the total for the month of April, $60,166,868 being the largest for that particular month since 1919. The actual volume of goods moving at the present time is greater than these figures indicate, because commodity prices were then highly inflated. There is nothing that need give us any concern in the fact that imports are exceeding exports. We have had a long series of largely favourable merchandise balances, and the currency and credit structure of the country is eminently sound. Canadian funds have been at a premium in the world's markets for some time past, and there is no doubt that in the later months of the year, when the seasonal movement of agricultural produce gets under way, the trade balance will swing back to a surplus of exports. In the meantime we can interpret the present import surplus as a good indication of the purchasing power in the hands of Canadian consumers. High prices for Canadian farm products, and this evidence of substantial purchasing power in the hands of Canadian purchasers indicate a condition of fundamental prosperity in the country.

Foreign Trade Convention.

Some thirteen years ago there was organized in the United States the National Foreign Trade Council, an organization which maintains a permanent office in New York, and whose members meet annually at a general convention for the purpose of discussing problems connected with foreign trade. Under the chairmanship of Mr. James A. Farrell, President of the United States Steel Corporation, the National Foreign Trade Council has been of great practical assistance to the foreign traders of the United States through the educative work it has carried on, and the solutions it has been able to find for the difficulties with which companies engaged in foreign business were confronted during a period of great expansion and development in United States Trade. This year, for the first time in the history of the organization, Canada was invited to send a delegation, and the first afternoon general session of the Convention was devoted to speeches on the trade relationship of Canada and the United States. A feature of the Canadian speeches was a frank statement of the handicap imposed on Canada by the high rates of the

tariff on the Dominion's principal agricultural products, and it was pointed out that under existing circumstances, it is difficult for Canada to make much progress in reducing the present one hundred million dollar excess of imports, which is an annual feature of our trade in merchandise with our Southern neighbour. In speaking before the Convention, Mr. G. F. Towers, of The Royal Bank of Canada, said in part:

"It is well to point out that Canada is the second best customer of the United States. During the year ending February last, for example, Canada bought 600 million dollars' worth of goods from the United States. These imports are widely diversified. Not only do we take raw materials, such as cotton and coal, and foodstuffs of a class that are produced in Canada, but we also take a tremendous amount of iron and steel products and manufactured goods of many kinds. What has been said in regard to the diversity of Canadian imports from the United States does not apply to nearly the same extent when we come to consider Canadian exports to the United States. Pulp and paper and other forest products are by far the largest item. The remainder is made up of such as furs, copper, precious metals, small amounts of various agricultural products, asbestos and last but not least, beverages. I wish to lay particular emphasis on the fact that 65 per cent of all Canada's imports are from the United States, while the amount we sell to the United States is only 35 per cent of our total exports. We buy from you each year over 100 million dollars' worth of goods more than we sell to you. The United States is Canada's main source of supply and any increase in our prosperity is at once reflected in increased purchase of United States goods. That is where the partnership comes in. What happens when you buy more from us? Instantly we buy more from you.

Now if, in the future, your production of foodstuffs could be expected to increase less rapidly than your population, this would be a factor of the very greatest importance for Canada. I am not sure, however, that we are justified in expecting the situation to work out in this way. The high rates of the Fordney Tariff would seem bound to stimulate the domestic production of various lines of foodstuffs, and thus postpone for some considerable time the day when the United States will import them in any quantity. We, in Canada, must acknowledge regret that this is so, because under other circumstances our proximity to a growing country of 120 million people would have given us an increasingly large market for our foodstuffs (a market that even a moderate tariff would not have kept us out of) would have enabled us to progress by leaps and bounds and to buy larger quantities of United States goods and to offer better opportunities for United States investors. We would have turned out more of the commodities that we produce so cheaply and so well, and would have bought more of the articles that you specialize in.

Undoubtedly we have remarkable natural resources but what a country sometimes overlooks is the fact that natural resources are no good, except possibly as ornaments, unless their commercial development is profitable. That such development has been and is being found profitable in Canada, is shown by the results achieved to date. As for the future, perhaps it will be best to let the statistics of the next ten years tell Canada's story. In many ways, the development has been most satisfactory during the last year, and increasing immigration and more prosperous business conditions have inspired a feeling of confidence at the present time. I think that the United States, as a participator in our trade in commodities, and as a generous and intelligent investor of capital in our country, will have no cause to criticize her partner for not equalling past performances. More and more of recent years we have had occasion to congratulate ourselves on the number of visitors we were attracting from south of the line and I sincerely hope that greater numbers will come in future to see how we are getting along. They could not find a warmer welcome in any country in the world, and their visits cannot fail to cement the long-standing relationship that has been so pleasant and profitable for us and, I hope, for the United States as well."

The reception accorded to the Canadian delegates was extremely cordial, and it was undoubtedly felt that their remarks on the subject of handicaps in our trade relations were in no way a criticism of the policy of another country, but simply a statement of the factors affecting trade between the two nations. It is a cause for congratulation that Canada should have had an opportunity to present her views before a gathering of this nature, and it is to be hoped that this country will be adequately represented at future conventions.

The spirit in which the Dominion representatives were received could not be shown more clearly than in the following quotations, the first of which consists of a telegram forwarded to President Coolidge at the close of the meeting, while the second is an extract from the final declaration prepared by the Convention Committee.

James A. Farrell, as chairman of the National Foreign Trade Council, forwarded the following telegram to President Coolidge:

Charleston S. C., April 30, 1926.

To

Honourable Calvin Coolidge,
President of the United States,
WASHINGTON, D. C.

The thirteenth National Foreign Trade Convention attended by over a thousand delegates from thirty-six States and fifteen foreign countries including fifty delegates from Canada, cordially appreciates your message of encouragement and sympathy.

Its gathering at Charleston where it meets for the first time on the South Atlantic Coast justifies your judgment of the prosperity of international trade conditions by the success that has attended its sessions.

Five hundred of our delegates come from South of the Mason and Dixon Line and open up a new foreign trade area of enterprise.

We also send you a message of international fraternity from fifty Canadian delegates, who for the first time, have taken over a general session of a National Foreign Trade Convention and have laid the foundation for better co-operation in trade conditions across the invisible border and for the increasing development and prosperity represented by the billion and half dollar trade between Canada and the United States.

JAMES A. FARRELL,
Chairman,
National Foreign Trade Council.

"The foreign trade of the United States for the calendar year 1925, measured by value and volume, was the largest of any normal year. It exceeded in value that of 1924 by more than $900,000,000 and in volume by more than a million and a half tons. The increase of exports was 6.9 per cent, and the increase of imports was 17.1 per cent. The change has been accentuated in the first three months of this year. We should, however, recognize that imports of materials not readily produced here are necessary and tend to increase foreign buying and assist our exports in finding ready markets.

This convention welcomes the participation in its sessions by the British Dominions, and especially of our Northern neighbours, who for more than a century of unbroken friendship has been one of our great suppliers as well as one of our best customers. The vast and growing trade between Canada and the United States is a striking proof of the value of such friendly relationship and an unanswerable argument for the spirit of co-operation in developing trade."

THE EUROPEAN ECONOMIC SITUATION.

Discouraging as are many of the features of the present European situation, no fair apprisal fails to show the steady improvement which has characterized the years since the War. Politically and economically the world is more stable than in 1919 or 1921. International trade is steadily increasing in volume, its dollar value is greater than before the war, although the decreased purchasing power of gold is such that this does not mean that a proportionate volume of goods is now in motion. Even though the standard of living abroad is not yet at 1913 levels, yet the spectre of starvation no longer haunts the nations of Europe. Peaceful settlements of political difficulties, and commercial treaties encouraging international commerce are now the order of the day.

Dark features such as the losses of the United Kingdom entailed by the recent general strike,—the long and acute period of depression in Germany, the revolution in Poland, the continual depreciation of French and Belgian money, the unsettled Italian situation, and the trade difficulties of the countries which formerly constituted Austria-Hungary, may be combined to produce a most discouraging picture. To an unfortunate extent nationalistic price is interfering with adjustments between nations, and party strife is preventing many countries from finding satisfactory solutions for their internal problems of taxation and budgeting.

Consideration of the actual trend of trade statistics presents evidence of greater improvement than might be anticipated after the discussion of such political events as those mentioned. The United States, for the moment, at least, is importing more goods than she is exporting. So long as the United States maintained an export surplus international financial balance was thrown more and more out of adjustment. The time must come when the United States imports a substantial amount more than she exports and the present trend of her trade figures may be considered quite favourable. The money of the United Kingdom, Austria, Czechoslovakia, Hungary, Switzerland, Sweden, Russia, Holland and Germany have been stable for more than a year. Germany has accumulated gold reserves as large as those held in 1913. Although

rehabilitation of European finance and industry is proving a longer task than was anticipated, economic adjustments are slowly being achieved, and the prospect of an eventual return to economic prosperity is becoming more of a probability and less of a mirage.

GERMANY.

Last year Germany experienced a most acute depression, money was scarce, bankruptcies were frequent, taxation high and unemployment common. Imports so far exceeded exports that there was pessimism as to the possibility of Germany's making external payments this year. A large part of these imports, however, were raw materials to be used in manufacture. Now the worst of the depression seems to have passed, taxes have been reduced, money has become more plentiful and according to recent reports the German Co-operative Buying Societies have experienced a 40% increase in turnover since the beginning of the year, indicating increased purchasing power in the hands of the consumers. Early crop reports are satisfactory and the foreign trade figures for the early months of the year suggest marked improvements. February exports exceeded imports by 88 million reichsmarks while March figures showed a 278 million reichsmark export surplus. Measurable improvement is also shown by the tax reduction measures of the government. The turnover tax has been lowered from 1% to ¾%, and the wine, luxury and salt taxes have been abolished. These measures became possible when it was discovered that government revenues showed a substantial surplus above the budget.

During 1924-25, the first year of the Dawes' plan, Germany was called on for only 50 million dollars derived from interest on railroad bonds, the balance of her 250 million dollar payment came from the foreign loan. In 1925–26, 60 million dollars were paid from the budget, 210 million dollars from interest on railroad bonds and the transportation tax and 30 million dollars from interest on industrial bonds. For the coming year the plan calls for only 28½ million dollars from the budget while the amount called for from other sources brings in about the same sum total as last year. Improvement in business conditions at this time would thus seem to have a triple significance. Germany can overcome a period of depression in the face of the necessity for large external payments, large sums can be transferred abroad without disrupting European finance, and, judging from the performance of the past year as reported by the Agent-General of reparations, there seems to be both the capacity and the will to meet these obligations.

There has been some question as to whether Germany will be able to meet the payments of 1928–29 which are twice as large as those called for this year and next. In 1928–29 the payments attain their maximum size and Germany will then be carrying the full load called for under the plant. In reality, the factors which tend to national prosperity are so complex that no one can be sure in advance as to the maximum amount a nation can pay. But unless new and greater difficulties are forthcoming the record of events during the past two years must be considered as strong presumptive evidence in favour of the present plan. It is most fortunate both for Germany and for the rest of Europe that so satisfactory a method of adjusting Germany's obligations has been found workable.

RUSSIA.

The necessity for export markets has caused Germany to seek closer trade relationships with Russia. Russian foreign trade is an increasingly important element in international commerce. In the last two years Germany has exported $100,000,000 worth of goods to Russia. In order to encourage this trade, the German government is financing these exports with sufficient credits so that agricultural implements, for instance, may be paid for from the proceeds of two harvests. In order to secure this market, Krupps has established four model farms in Russia where their machinery may be demonstrated to the peasants of the surrounding territory. As the Russian is not familiar with modern methods in agriculture, lumbering or mining, the process of introducing modern machinery is one which will require education and patience. Before the war there were less than 500 tractors in all of Russia- 12,500 were used in connection with the last harvest.

While it is undoubtedly somewhat difficult to form any accurate estimate of industrial and economic conditions, yet figures from Russian sources indicate that production in some lines is now approaching pre-war proportions. Forty per cent more oil was exported from Russia in their fiscal year of 1924–25 than in 1913, but iron and gold production was only about 50% as great. Textile production has tripled in the past two years and is now on practically a pre-war basis. The pulp and paper industry is now

producing about 95% of its 1913 volume. But primarily, Russia is an agricultural country and the progress made in this field is more important than in other activities. In 1925, 225,000,000 acres were sown as compared with 245,000,000 acres in 1913. So far as planting is concerned, the following table shows the progress being made.

AREA PLANTED IN VARIOUS CROPS.

Thousands of Acres.

	1913	1922	1924	1925
Grain ..	2,15,659	1,17,674	1,77,579	1,94,400
Sunflower Seed ..	2,205	3,989	5,696	6,759
Potatoes ..	6,938	8,338	10,556	11,257
Cotton ..	2,119	140	1,229	1,629
Sugar Beets	1,890	456	842	1,193
Hemp ..	1,755	364	1,796	2,083
Flax ..	2,774	1,134	2,994	3,676

During the first years of the present regime, Russian money was inflated in somewhat the same manner as in Germany. By March 1924, however, the Russian Soviet realized that it must have stable money and some means of securing credit abroad; the whole currency system was changed and a new note, the Tchervonetz was then issued, having a value of $5.146. The rouble was given a value of $5,146. Since that time the Tchervonetz has been maintained at dollar parity. They claim reserves against their note issue amounting to about 40%.

The question as to the possible stability of Russia is one of interest throughout the world. Outside attempts to upset the present government have received little help from the people of the country. The Russian peasant secured land ownerships from this government with the result that he does not wish a change, however little he may believe in the doctrines for which the government stands. The industrial worker receives better pay and greater privileges from the government than he received under the former regime. With both the industrial worker and the peasant satisfied, those who desire to upset the stability of the government have no powerful group within the country to whom they may look for assistance. So far as the economic situation is concerned, the Russian compares conditions under the old corrupt aristocracy with present conditions, and does not desire a return to the old regime. One factor, the importance of which it is hard to estimate, is the wholesale effort that is being made to educate the people. As they become more literate, and as there comes to be a more free exchange of thought with the outside world, some knowledge of the progress and standards of living that exist elsewhere will be acquired. The desire for the rewards of individual initiative may then make so great an appeal as to cause them to seek a change in the theory of their government. Education may eventually work great changes in Russia but there is no immediate sign of any marked instability in the present organization.

Distrust of the Soviet's stability, antagonism to their theories of economics, and the fear that they may repudiate new debts as they have already repudiated the debts of the old regime, have combined to make business men regard Russia as a poor credit risk. For a time the outside world showed little desire to resume commercial relations with Soviet Russia. In actual fact, these relations have now been resumed, but there is little prospect that Russian credit will command the confidence of the business world until they restore the private property of foreigners confiscated during the revolution, and make some provision for the funding of the debts outstanding against the country.

No matter what may be thought of the policy of trading with Russia, the actual facts of the case are that Russia is carrying on a substantial trade with the outside world. In the March issue of the Federal Reserve Bulletin, Russian imports for 1925 are given at 736,934,000 roubles ($379,250,000) as against exports of 559,447,000 roubles ($287,900,000). The greatest portion of this trade is with the United Kingdom, although the exports from the United States last year had a value of nearly $100,000,000.

CHINESE COTTON-MILL STATISTICS FOR 1925.

"*Commerce Reports*", dated the 15th March, 1926, issued by the United States Department of Commerce, states that according to a list recently published by the Chinese Millowners' Association, China had 118 cotton mills with 3,414,000 spindles and 25,931 looms operating and 174,000 spindles and 4,090 looms under construction during 1925. Of this total 69 mills, 55 per cent of the spindles and 63 per cent of the looms were Chinese owned; 45 mills, 39 per cent of the spindles and 28 per cent of the looms were owned by Japanese; and 4 mills, 6 per cent of the spindles and 9 per cent of the looms were British owned. Compared with figures for 1923 the percentage of Japanese-owned spindles and looms has increased, while that of Chinese and British-owned mill equipment has decreased.

Sesqui-Centennial Exposition.

Booming Cannon and Pageantry.

Philadelphia, May 31st. --Booming guns, martial music and pageantry marked the formal opening to-day of the Sesqui-Centennial International Exposition, being held in Philadelphia to commemorate the one hundred and fiftieth anniversary of American Independence.

Members of the President's cabinet. Senators, Representatives, Governors and their aides, ambassadors and ministers from various nations throughout the world and distinguished persons in every walk of life took part in the opening exercises. The spacious and beautiful Exposition grounds, which comprise 2,000 acres including the Philadelphia Navy Yard. were thronged with thousands, hours before the scheduled ceremonies. All roads leading to the grounds were thronged with motor cars and pedestrians.

Secretary of State Kellogg and Secretary of Commerce Hoover, personal representatives of President Coolidge, were principal speakers. Mayor W. Freeland Kendrick of Philadelphia, as President of the Exposition, made the opening address.

All the brilliance and dignity appropriate to such an occasion surrounded the ceremonies, while predominating throughout was a spirit of patriotism and international friendship.

Foreign Dignitaries Attend.

Among the foreign dignitaries present were: The Right Honorable Sir Esme Howard, G.C.M.G., K.C.B., C.V.O., Ambassador E. and P., Great Britain; Senor Don Juan Riano y Gayangos, Chamberlain to His Majesty the King of Spain, Ambassador E. and P., Mr. Axel Leonard Astrom, E.E. and M.P., Finland; Mr. Jan Ciechanowaski E.E. and M.P., Poland; Mr. Zdenek Fierlinger, E.E. and M.P., Czechoslovakia; Senor Dr. Don Ricardo J. Alfaro, E.E. and M.P., Panama; Mahmoud Samy Pasha and Madame Samy Pasha, E.E. and M.P., Egypt; Ismail Kamel Bey, First Secretary, Egypt; Dr. Farg Mikhail Moussa, Third Secretary, Egypt; Abu-el-Enein Salem Effendi, Attache, Egypt; Senor Dr. Don Salvador Castrillo, E.E. and M.P., Nicaragua; Senor Don J. Rafael Oreamuno, E.E. and M.P., Costa Rica; Dr. Ante Tresich Pavichich, E.E. and M.P., Serbs, Croats and Slovenes.

Mr. Kazys Bizauskas, E.E. and M.P., Lithuania; Mr. Hannibal Price, E.E. and M.P., Haiti; Senor Don Rafael Sanchez Aballi and Senora de Sanchez Aballi, Ambassador E. and P., Cuba; Senor Don Juan B. Chevalier and Senora Dona Dora Z. de Chevalier, Secretary of Legation Panama; Senor Don. Eduardo M. Sosa, Attache, Panama; Major Victoriano Casajus. Royal Spanish Army, Military Attache; Dr. Pavel Stransky, Secretary of Legation, Czechoslovakia; Senor Don Cayetano de Quesada, Attache, Cuba; Signor Romolo Angelone, Commercial Attache, Italy; Nobile Giacomo de Martino, Ambassador E. and P., Italy; Mr. Mirza Bagher Khan Kazemi and Madame Kazemi, Counsellor of Legation and Charge d'Affaires, Persia; Mr. Abdullah Entezam and Madame Entezam, Third Secretary, Persia.

Dr. Santiago F. Bedoya, Second Secretary of Embassy, Peru; Dr. Ovidio Perez, Attache, Venezuela; Mr. Wenceslao Escalante, attache, Argentina; Dr. Ludwig Kleinwachter and Madame Kleinwachter, Counsellor of Legation, Austria; Commander Radler de Aquino, Madame de Aquino and Mademoiselle de Aquino, Naval Attache, Brazil; Dr. Frederick Fischer-Am-t, Consul-General of Austria.

Message from President.

An official message from President Coolidge to the people of the United States upon the opening of the Sesqui-Centennial was dropped from the sky by an airplane and a few minutes later was read by Mayor W. Freeland Kendrick, of Philadelphia, before an audience of 20,000 invited guests who had assembled in the gigantic Stadium which seats 100,000 persons and was filled by the public.

Such was the formal opening of the great Exposition. The official opening will take place on July 3 when President Coolidge arrives in Philadelphia for a two-day visit to the Exposition city.

To-day was a day of glory and pride for the American people. The notable and distinguished assemblage, gathered together beneath the flags of this and other nations, bore testimony to the courage and steadfastness of George Washington, Benjamin Franklin, Patrick Henry and all the other heroic patriots of a Colonial period. But that was not all. It marked the dedication of a young nation into a new realm of industry, of commerce and culture.

From the moment Mayor Kendrick received the government officials and foreign representatives in his reception room in City Hall early

in the day there was a stately and magnificent air to the opening ceremonies.

It was shortly before noon when Troop G, 3rd U. S. Cavalry (the President's Troop) and the 103rd Squadron, Pennsylvania National Guard, wheeled into position on the plaza of City Hall and prepared to escort the distinguished assemblage to the Exposition grounds.

One-Hundred-Fifty-Gun Salute is Fired

Down historic South Broad Street the procession started as the first 150-gun salute by the 108th Field Artillery, P. N. G. roared out from the Exposition grounds. Past the colorful ranks of 20,000 Mystic Shriners lined on both sides of the street, the procession moved. At regular intervals of a few seconds, the rolling echo of cannon vibrated up the thoroughfare as throngs of guests slowly wended their way past cheering throngs and the colorful decorations of many nations.

As the cavalcade neared the entrance of the Exposition the last gun of the salute roared its patriotic welcome. Then for a few moments there was an impressive silence, which was broken by a salute of nineteen guns in honor of Secretary Kellogg and Secretary Hoover.

Through ranks of soldiers, sailors and marines the procession made its way to the huge Stadium, where governmental officials and Mayor Kendrick entered the flag-draped President's box. The remaining guests of honor were seated in surrounding boxes.

At once the military escort, which included troops under command of Colonel J. W. Beacham, Jr., who will be in charge of the "Sesqui-Brigade" of 1,000 picked troops throughout the six months of the Exposition, swung into position at the far end of the Stadium and marched past the official boxes. The bands and troops then massed into a hollow square, while 4,000 members of the Sesqui-Centennial Chorus entered upon a huge stage in the northern end of the Stadium.

Triple Salute is Given.

The quiet of the scene was then shattered by the roar of a triple salute of twenty-one guns each from batteries of the Army, Navy and National Guards, marking the opening of the ceremonies. Hardly had the echoes ceased when the Chorus sang "America". Then the drone of airplanes was heard and high above the Stadium there flashed a tiny white speck that had been dropped from one of them.

Slowly it dropped, until it came to earth in the Stadium. This was handed to Mayor Kendrick. It was the President's message bidding welcome to the Sesqui-Centennial International Exposition.

Then as Mayor Kendrick requested a minute's silence in memory of the soldier dead of the United States, an airplane from a squadron of fifty circled the huge Stadium and dropped a tribute of flowers.

Before the President's message was read by Mayor Kendrick, the Right Reverend Thomas J. Garland, Bishop of the Episcopalian diocese of Pennsylvania, offered the invocation. Mayor Kendrick then read the President's message and formally opened the Exposition. In turn, the Mayor introduced Secretary Kellogg, who as personal representative of the nation's chief executive, addressed the assemblage. A complete amplifying system enabled every person in the huge amphitheatre to hear every word.

At the conclusion of the Secretary's address the Chorus again was massed and this time it sang "Unfold Ye Portals," symbolic of the opening ceremonies. Then Secretary Hoover was introduced and in characteristic style delivered his message, following which the Chorus sang the "Hallelujahs" chorus.

Benediction then was pronounced by the Right Reverend Monsignor Joseph F. Whitaker, representing Cardinal D. J. Dougherty, and at its conclusion the massed bands played the "Star Spangled Banner."

Guests Tour the Grounds.

There was a moment of silence and then in impressive formation the "President's Cavalry Troop" again assumed its post as escort to the visiting dignitaries and the procession moved to the Auditorium where a luncheon was served. A tour of the grounds and Exposition buildings followed. Daylight pyrotechnical displays and band concerts were held in afternoon.

Philadelphia was in gay attire for the Exposition's opening to-day. The City Hall was elaborately decorated, two companies of the 111th Infantry, P.N.G., surrounding it as a guard of honour. South Broad Street, the principal thoroughfare leading to the Exposition, was decorated as the "Avenue of the Nations," flags, shields and emblems of the twenty-four participating foreign nations being displayed in artistic arrangement. Two blocks were devoted to the "Arabian Way," which was arranged in honor of the Mystic Shriners who are holding the annual conclave in this city.

Pennants were flying overhead and, arranged in diamond-shape, were myriads of electric bulbs which will be lighted for the first time

to-night. The principal business streets, such as Market, Chestnut and Walnut, were elaborately decorated, while the entire city has taken on a carnival appearance.

INAUGURAL BALL TO-NIGHT.

To-night an Inaugural Ball will be held in the Auditorium for invited guests, but provision has been made to hold a promenade dance on the wide boulevard in front of the Stadium for the benefit of other visitors to the Exposition. It is expected that thousands will take part in the promenade dance. The day's festivities will come to a close with a pyrotechnical display late to-night. Night flying squadrons of airplanes will lay smoke screens upon which searchlights will play streams of coloured light.

The Sesqui-Centennial Exposition on its opening to-day, from the standpoint of completeness, established a record for international expositions. A survey of the grounds and buildings showed that the gigantic undertaking is about 75 per cent finished, and there is every assurance that by July 1 the Exposition will be 100 per cent completed.

In the past, expositions have been forced to postpone their openings for months. The World's Fair which was scheduled to open in Chicago in 1892 did not open until 1893. The St. Louis Exposition also was postponed a year and was not completed until ninety days after the date set for the postponed opening. The San Francisco Exposition was sixty days late, while the Jamestown Exposition was delayed four months.

The Sesqui Exposition is gigantic and comprehensive. There are forty-five major buildings. These are exclusive of Gladway structures, twenty buildings on High Street of 1776, Treasure Island buildings and more than 250 booths, stands, restaurants and dance pavilions that dot the grounds.

EXHIBITS INTEREST VISITORS

The visitor to-day found exhibition palaces just teeming with interesting exhibits from many parts of the globe. Taking haphazard some of the principal exhibits as one makes a tour of the Exposition, the latest developments in the sciences and arts were revealed. Radio and electrical devices play an important part. The telephone and its intricacies are revealed in a exhibit which shows a modern exchange office displayed. The automatic telephone, which is rapidly being installed throughout the country, proved a magnet for thousands.

The railroads of the country are displaying working and still models of their equipment. The Pennsylvania railroad on a scenic background portrays the numerous activities of its system as well as some of the landscapes of the territory through which it operates. An imposing reproduction of the Grand Central Station in New York City, is the contribution of the New York Central Railroad. Models of Hudson River steamboats proved a source of much interest, while various other railroads and steamship companies, such as the Baltimore and Ohio and Reading, show in vivid manner views of the sections of the country over which they operate.

A two-storey house, erected by the wall paper industry, also is an attractive exhibit. The interior of the house is divided into rooms and booths wherein are shown numerous displays that prove of interest to the home lover. The rooms are appropriately furnished with draperies, furniture, rugs and electric fixtures, together with the newest patterns in wall paper.

Household effects, too, play their part in the appointed order of things. Beginning with furniture, the John Wanamaker exhibit displays furniture of the most exquisite design with rare rugs and draperies of corresponding beauty.

Household refrigeration, heating and cooking appliances and everything necessary to the up-to-date home are shown in profusion. To thousands of lovers of home-made ice cream, the newest vacuum freezing processes proved an unfailing delight. Demonstrations whereby the ice cream is frozen in a short space of time were given.

The exhibit of frigidaire refrigerating machines also attracted much attention.

The exhibits include the last word in stoves, water heaters, dish-washing machines, vacuum cleaners, washing machines, cleaning specialities and alkalies, foodstuffs and everything imaginable.

Adding machines, cash registers, type-writers and even meat slicing machines also have their places in the long list of exhibits. Booklovers are well taken care of by exhibits of the leading publishers in which the modern methods of printing and book-binding are shown.

$25 000 COFFIN IS SHOWN.

One of the most unusual exhibits was a duplicate of the burial casket made for Dr. Sun-Yat-Sen, prominent statesman of China. The casket is of solid bronze and is valued at $25,000.

Gun and sport accessories, jewelry, objects of art, hats, farm implements and whatnots are arranged attractively on every hand.

The exhibits of foreign nations revealed an array of products that was startling. Japan occupies 36,000 square feet of space in one of

the main palaces and has four special buildings about completed in the foreign section of the Exposition grounds. The Japanese participation was made possible through $600,000 appropriated by the Diet and $400,000 contributed by leading industries. The exhibits include the finest products of Japan's industries and crafts. Silks and ceramics, prints and paintings, armorial collections of feudal Japan and specimens of the export industries are represented. The entire exhibit is on a larger scale than ever before attempted by Japan.

Great Britain's exhibits are shown in 50,000 square feet of space in the Palace of Liberal Arts and Manufactures. The exhibits include Worcester and Doulton china, fine Irish linens and dress goods.

Holland is displaying some of its artistic industries, Delft china, arts and crafts, while Denmark shows a remarkable collection of Copenhagen china, artistic silverware, textiles and arts and crafts.

Toys, textiles, machinery and chemicals comprise a portion of the German exhibit. Austria is showing fine leather goods, enamels and dress goods. Hungary is displaying a rare exhibit of her artistic industries, while France offers a collection of perfumes, lingerie, gowns and millinery that proved of interest to the feminine eye.

While Czecho-Slovakia's pavilion was not finished for the opening day, that country offered the first day visitors to the Exposition an attractive display in the Palace of Agriculture. The Persian pavilion, while not 100 per cent completed, was open to visitors as was several other pavilions which still lack a few finishing touches.

Taj Mahal is Outstanding.

One of the most striking buildings on the grounds is a virtual reproduction of India's famous Taj Mahal. The huge dome looms high above the skyline of many surrounding structures. Everything typical of India is shown in this huge white structure. Native artisans, clad in the costumes of India, were seen weaving rugs, making lacquerware, embroideries, sandal wood boxes and beads. The building is a scene of enchantment and undoubtedly will prove one of the most popular buildings at the Exposition.

The color scheme of the Exposition buildings is novel. The effect as the visitor enters the grounds is that he is viewing a "Rainbow City". The buildings are tinted in pastel shades laid on stucco. The whole effect, while not lacking in vitality, is soft and restful to the eye. It is somewhat that of the vari-tinted buildings of the tropics.

Huge Illuminated Liberty Bell.

At the entrance to the grounds is a huge illuminated Liberty Bell. It is six stories in height and contains 26,000 electric lights. After passing through the main entrances, the visitor finds on his right the mammoth Auditorium which seats 20,000 persons and contains an organ that cost $150,000. This building will be the scene of the great majority of the 200 conventions that are booked for Philadelphia this year. It also contains the radio rooms from which the events of the Exposition will be broadcast.

Directly across the street from the Auditorium is the Palace of Liberal Arts and Manufactures, a building which has a floor space of 7.75 acres. On the south of this palace is located the model Post Office which was erected by the U. S. Government and which will handle all Exposition mail. Next comes Palace No. 2, which is devoted to foreign and civic participation, agriculture and fashions. This building covers 8.35 acres. The Palace of Fine Arts covers an area of 70,000 feet; the Palace of Education and Social Economy, 108,992 square feet of space, and the Palace No. 5, U. S. Government, Mines, Metallurgy, and Transportation, 7.50 acres.

In the rear of Palace No. 2 there is a vast parking area which proved a boon to the thousands of motorists who visited the Exposition to-day. There also are other parking places around the ground, affording space for 100,000 automobiles.

The huge Stadium lies at the south-east end of the grounds, adjoining the League Island Navy Yard. The landscape effects around the vast amphitheatre are beautiful, and when the trees and rose bushes are a little further advanced they will make an ideal setting for the mammoth horseshoe.

Fine State Buildings.

West of the Stadium are located the buildings of various states. New Jersey's reproduction of the Hessian Barracks at Trenton, Delaware's replica of its old State House, Connecticut's reproduction of the Senate Chamber of its famous old State House, rearing up in all their splendour before the vision of persons leaving the Stadium. Other State buildings are in this section of the grounds, although New York's two structures adjoin Sulgrave Manor, the reproduction of Washington's ancestral home in England.

The buildings and pavilions of foreign nations

are located in the south-western part of what is known as League Island Park. One of the most outstanding of the foreign structures in this section is the Persian Building, which is designed after a famous mosque. Japan's four buildings, one a tea garden, also are on a beautiful lake in this section.

The camp site of the 1,000 picked U. S. troops, known as the "Sesqui Brigade," also is located in League Island Park. The troops took part in to-day's opening ceremonies and they will stage drills and manoeuvres at the Exposition daily until December 1. They also will act as guards of honor to distinguished visitors to the Exposition.

One of the most interesting contributions to the Exposition is the reconstruction of Market Street, Philadelphia, as it was at the time the Declaration of Independence was signed. Twenty buildings comprise the group designated as "High Street of 1776". The street was reconstructed by the Women's Division of the Exposition Association. Some of the structures that are on the street include an old blacksmith shop, the first brick house in Philadelphia, Benjamin Franklin Printing Shop, first Infirmary, Free Society House, Guard Counting House, Indian Queen House, Jefferson's Home, Little Wooden House, Loxley House, Museum, Quaker Meeting House, Robert Morris House, Slate Roof House, Peggy Shippen House, Washington House and Washington Stables.

"Treasure Island," with its reproduction of the towering Rocky Mountains, was one of the most popular and outstanding attractions on the grounds.

The landscaping effect throughout the grounds is exceptionally attractive. Simple formal treatment has been adhered to on the main avenues and around the buildings. Great splashes of colour, however, in harmony with the general gay colour scheme of the Exposition, have been introduced at strategic points, creating interest and breaking any monotony that might exist as the result of long expanses of formal treatment. Along Broad Street sculptural niches have been created by planting beds of evergreen trees, broad-leaved evergreens and flowering shrubs. The interior design of each niche is individual to properly display the different sculptural units, yet the exteriors are uniform in shape, size and appearance in accordance with the formal design of the entire scheme.

Indian Economic Notes.

Co-operative Cotton Mill.

One of the most interesting co-operative experiments so far undertaken in India is the Bagerghat Co-operative Union. The Union is situated at Khandapara about seven miles from the headquarters of the Bagerghat subdivision in the district of Khulna. The young men of the village have formed themselves into a co-operative society to own and run a weaving factory. The institution was started as a hand-loom factory about six years ago, but since last year it has been converted into a power-loom factory. They have now installed 12 looms driven by power, and they propose gradually not only to add to the looms but also to introduce power-driven machinery in subsidiary processes of weaving. This is, therefore, the first co-operative cotton mill in India.

The young men of the locality from amongst whom membership is drawn are themselves the operatives. The main idea is that they should, from the wages received by them, gradually subscribe the full amount of capital which is required for the undertaking. The present fixed capital of the Union is about Rs. 10,000 which has been raised on shares, while its fixed stock amounts to Rs. 25,543. Rs. 1,370 of share capital has so far been subscribed by the operatives, the amount being raised by small deductions from their weekly pay. The bye-laws require that each operative member should at least subscribe 5 shares and there is no limit to the amount of shares held by any operative except the restriction imposed by statute. The Union, if worked successfully, will greatly assist in the solution of the problem of lower middle class unemployment and in adding to the wealth of the country.

Land Revenue Settlement Bill.

The following Press Communique, dated Ootacamund, the 12th May, has been issued by the Madras Government :—

The Madras Government forwarded to the Government of India a draft of a Land Revenue Settlement Bill for the Madras Presidency which



LALA LAJPAT RAI
Labour's Representative at Geneva.



SIR CHARLES TODHUNTER, K.C.S.I.
Private Secretary to His Highness the Maharaja of Mysore.
(Assumed Charge on 23rd July 1926)

contained provisions giving the local Legislative Council the power to fix by means of a Taxation Bill the money rates of assessment both at initial settlements and at re-settlements. The Government of India have expressed their inability to accept the proposal on the grounds that it involves a fundamental departure from the practice which has hitherto been observed in land revenue settlements throughout India, that no similar proposal is contained in the legislation which either has been introduced or is about to be introduced on the subject in other parts of India, and that a careful examination of the language used by the Joint Select Committee shows that their support cannot be claimed for the proposal. Apart from the question whether the Legislative Council would be prepared to consider a Bill that did not contain the provisions in question, it would not be practicable at this period of the life time of the present Council to pass a Bill of the magnitude through all the prescribed stages before the dissolution. Hence the Government do not propose to introduce the Bill in the present Council.

Secondary Education in Bombay.

The progress of secondary education in the Bombay Presidency is, as generally admitted, greatly hampered by want of an adequate supply of trained teachers. One of the conditions for the recognition of a non-Government school, laid down in the Government Grant-in-Aid Code, is that it should have an adequate, well qualified and competent teaching staff. In determining the extent to which this condition is fulfilled the Educational Department considers what proportion of the teachers have received training in the theory and practice of teaching and the Department will, in future, attach great importance to the fulfilment of this requirement. Schools which fail to employ an adequate number of trained teachers will be liable to have their grants reduced or even to have their recognition withdrawn. The Secondary Training College, Bombay, makes provision for training in the theory and art of teaching and perpares students for the examination for the B.T. degree of the Bombay University. Hitherto, most of the accommodation in this college has been reserved for training teachers for Government Secondary Schools but in future more places will be kept open for teachers from non-Government schools. Government have in this connection sanctioned 25 scholarships of Rs. 10 per mensem and these will be distributed by selection, due consideration being given to the requirements of the various parts of the Presidency and of special communities. The number of the stipends being limited, it is hoped that the schools will also be prepared to depute teachers at their own expense. Such expenditure will be admitted for the purpose of Grant-in-Aid. In the admission of the students to the Secondary Training College preference will be given to teachers serving in schools recognized by the Educational Department, but a limited number of specially selected graduates not employed in any school will also be admitted, and will be eligible for scholarships. It is hoped that schools will require such members of their teaching staff as are not in a position to enter a Training Institution to study the Theory and Art of their profession and to obtain a certificate of qualification such as the Secondary Teacher's Certificate Examination.

Cold Process Soap Making.

Mr. E. T. Webb, a well-known authority on soap manufacture, points out some new aspects of the cold process of soap making which to the producer of 10 tons or less per week is the most efficient and economical method. The popular white Windsor qualities have been produced by this method for years. For the kinds, however, the process has been unpopular because of the belief that soaps could not be successfully made by it unless the stock contained a fair proportion of cocoanut oil, or high titre material (tallow, palm oil, etc.), and that rosin, fatty acids or stock containing a high percentage of free fatty acids could not be used. Mr. Webb states that these alleged limitations on the stock permissible are erroneous, and shows how such materials may successfully be incorporated. Mr Webb, who is a practical soap maker and a soap technologist of wide experience, gives intimate details of procedure in the May issue of the *Perfumery and Essential Oil Record*.

Encouragement of Arts and Crafts.

The Government of Bombay have recently decided to take steps to revive and encourage indigenous Arts and Crafts in the Presidency. These include: Carpets, Calico Prints, Hand-woven silk, Kinkhabs, Embroidery, Lace, Carved Sandalwood, Lacquer work and Jewellery. Before a definite scheme can be formulated it has been considered necessary to have a complete survey of the existing Arts and Crafts made by an experienced technologist who can judge and appreciate the productions of artists and artisans from their artistic value. Government have, therefore, appointed

Mr. G. P. Fernandez, Assistant Curator of the Art Section of the Prince of Wales Museum, to investigate and report on the following points: (1) The intrinsic value of the articles manufactured; (2) Their artistic value: (3) The comparative prosperity of the trade; (4) The market for the goods; (5) The possibility of improvements in the method of manufacture, etc. Mr. Fernandez will visit not only all the chief centres in the Presidency but also, with their previous consent, Indian States which are in political relations with the Government of Bombay.

Visvabharati Rural Scheme.

Convinced of the potentiality of the co-operative movement, the workers of the Rural Reconstruction Department of the Visvabharati have undertaken the reconstruction of villages on co-operative principles. The bye-laws framed for them take into account the various directions in which rural reconstruction might proceed and yet enabling, at the same time, a single organization to meet all kinds of needs of a village without putting the same body of men to the trouble of getting different societies registered for the different needs of the villagers. The objects of these societies are as follow: —

(*a*) Spread of all kinds of education within the area of operation of the society;

(*b*) Bringing about Moral and Social Reforms and settling village disputes by arbitration;

(*c*) Improvement of Agriculture on scientific lines by the supply of the daily necessaries of villagers at cheap, wholesale rates, and selling the produce jointly at advantageous rates;

(*d*) Encouraging cottage industries; and

(*e*) Improvement of Village Sanitation.

And to attain the above objects the society proposes to acquire landed properties; open a shop or godown; grow fish in tanks and vegetables on their banks and sell them in the market; maintain breeding bulls for the improvement of village cattle; and organize a co-operative supply and sale society, a co-operative irrigation society, a co-operative industrial workers' society and so on.

Self-help is the keynote with regard to the collection of funds for these organizations, but outside help if offered, will be accepted and used for the purpose earmarked.

The application of the co-operative principle to the work of village reconstruction is the most effective method for such work, under the present conditions. If properly worked, the scheme might be expected to enable the villagers within a short time to stop the present rapidly extending tendency to disintegration of the villages. And this would eventually help them to become healthier, wealthier and better citizens.

Topics in the Journals.

Europe's Wheat Supplies.

Sir Henry Rew, K.C.B. writes as follows in *The Englishman*:

For the purpose of statistical generalization the world may be conveniently divided into six great divisions or continents, *viz.*, (1) Europe, (2) North and Central America, (3) South America, (4) Asia, (5) Africa, (6) Oceania.

In the supply of wheat Europe alone has an insufficiency, to which all the rest of the world, in a greater or less degree, contributes. Before the war the European requirements were met to the extent of 43 per cent from North America, 26 per cent from South America, and 17 per cent from Asia.

These proportions varied from year to year, but they represent the average of the quinquennial period 1909-13. The reaction of the war on wheat-exporting countries increased the predominance of North America, mainly by reason of the extension of the wheat area in Canada. On the mean of the two latest cereal years (1924-25 and 1923-24) 58 per cent of the exports of wheat came from North America and only 4 per cent from Asia, which, in fact, connotes India, always an uncertain factor. It may be remarked that a continental classification of the sources of the supply is a geographical amplification. The exporting countries which are important from the point of view of the international wheat trade are only five, now that Russia is for the time being eliminated. They are Canada, the United States, Argentina, India and Australia, with Chili, Algiers and Tunis as subsidiary and relatively small contributors.

Importance of Rye.

In considering the demand for wheat in European countries it must be remembered that for a large proportion of the population rye is the staff of life. The replacement of rye by wheat, which is generally regarded as resulting from a rising standard of comfort, was apparently proceeding gradually before the war, but there are indications that the movement was checked by the war and that there has been some reversion to rye since 1914. Russia which is mainly a rye-eating country may be disregarded in view of the uncertainty of the statistical and sociological data available, but in Central Europe it is probable that the consumption of rye exceeds that of wheat. In Ger-

many, for example, the area devoted to the cultivation of rye is three times greater than that under wheat, while in Poland it is more than four times greater. On the other hand, in some countries, such as Great Britain, wheat is practically the only grain used for human consumption.

The latest calculations of the International Agricultural Institutes, relating to the cereal year 1924-25, indicate that in that year Europe, excluding Russia, produced about 55 per cent of its wheat supply, the remaining 45 per cent being imported.

The ratio of home-grown to imported produce varies greatly. Thus Norway imported 92 per cent, Holland 85 per cent, Great Britain and Ireland (including the Irish Free State) 80 per cent, Belgium 75 per cent and Greece 68 per cent of their wheat requirements, while on the other hand France imported only 10 per cent, Poland 30 per cent, Italy 35 per cent, Germany 47 per cent and Denmark 51 per cent.

A Two-fifth's Deficiency.

These calculations relate to a single year and in some cases the figures are abnormal. The "apparent consumption" of each country is reckoned by adding the estimated amount of the home crop to the recorded quantity of wheat and flour imported, after deducting exports, if any. As no allowance is made for any difference in the stocks carried over at the beginning and end of the year, the calculation is necessarily approximate, while the natural variation in the crop from one season to another introduced another disturbing factor. The risk of relying on the figures for a single year is exemplified in the case of Germany which in the cereal year 1923-24 is reckoned to have imported only 23 per cent of her total wheat requirements instead of 47 per cent as in 1924-25. But allowing for seasonal and local diversities it appears that on an average Europe is dependent on other continents for at least two-fifths of the wheat required at the present rate of consumption.

The economic and political implications of this fact are significant. It may be said to be one of the dominant factors of international commerce, if not, indeed, the most important. There is no reason to think that the dependence on extra-European sources of supply will diminish in the future. On the contrary it is likely to increase. The area of wheat in Europe was greatly reduced during the war period, and although it has since been extended it still remains less in relation to population than it was before 1914. Demand, on the other hand, increases steadily not only by the natural increase of population but also by the gradual restoration of normal standards of living and the growing preference for wheat, by those who were formerly content with rye or other cereals.

Russia's Possibilities.

These tendencies are apparent, but their effect in the future on the world's wheat trade, and on the position of Europe as a wheat importer, is largely contingent on the possibilities, at present incalculable, of Russia. That, sooner or later, the wheat-producing potentialities of that country will be realized, and that it will make substantial contribution to the supplies available to meet the needs of the remainder of Europe, may safely be predicted.

In that event all present calculations will require modification. But as matters now stand it is, at any rate, consolatory to know that the demand of Europe on the rest of the world for wheat can readily be met even if it should become much greater. The resources of wheat-exporting countries, if not inexhaustible, are capable of much further development, and the time is still far distant when any serious shortage of wheat supplies in a normal season need be contemplated. But it may well be that if Europe demands more abundant supplies the cost may be greater. The question of interest, therefore, is not whether the wheat required will be obtainable but at what level of price it can be purchased. An attempt to find a complete answer would involve complex monetary considerations as well as a detailed discussion of the salient facts of economic geography, and it can only be said, very generally, that there appears to be no reason to expect any marked change in the international wheat markets during the current cereal year.

School Gardens.

The following is from an article by Mr. Alexander Perera, Inspector of School Gardens, Peradeniya, in the June number of *The Tropical Agriculturist*, a journal published by the Department of Agriculture, Peradeniya, Ceylon :—

The usefulness of school gardens is now a recognized fact, but their real value has not yet been fully appreciated—chiefly because school garden work is looked upon not as an educational work, but as a means of imparting knowledge of a rural pursuit. Gardening should be a school subject taken on the lines of other subjects such as Geography, History, Drawing, etc. The gardens should be educational and should exist for scholars, and not scholars for the gardens.

It is well known that theory without practice is useless, especially in agricultural operations, and it must also be recognized that practice without theory is a great drawback. The greatest amount of success is obtained by the worker who possesses a well-balanced knowledge of both.

There are two methods in practice in working school gardens one is the common plot system where all the pupils work together in one common plot. The second method is that in which each worker (sometimes assisted by one or two junior boys) is responsible for his own plot, however small.

Every school garden of a fair area should have a practice plot and nothing should be grown on it. The preparatory operations of digging, trenching, bed forming, and drill drawing should be taught here- in fact all necessary cultural work should be rehearsed in this plot. There should also be a nursery plot where seed sowing, transplanting, and other works of propagation are shown; a fruit plot where representative plants of good varieties of fruits are grown; an experimental plot where simple trials of manures, etc., are carried out; an economic garden where different kinds of vegetables, foodstuffs, and curry stuffs are grown; and a flower garden where a few select varieties of flowers are cultivated in ornamental beds pots and boxes.

On large plots in the garden representative cropping is easily secured, while in smaller plots intercropping must be resorted to, especially to demonstrate the best use of space at disposal; at the same time over-crowding must never be permitted.

In cultivating and cropping a succession of crops must be secured so that a continuous yield of produce is obtained, and provision must be made for rotation of crops in successive years so that the exhaustion of the soil is prevented. Root crops should be followed by leguminous crops.

The school garden should be made to come into touch with school subjects where possible. Lessons

in drawing may be taught by sketching the shapes of leaves, flowers, fruits, insects, weeds, etc. Lessons in composition may be set about the cultivation of some garden crop grown by the pupils, the life history of an insect, weed or some common pest. Reading may be taken from an Agricultural Reader or from an agricultural subject in a newspaper or magazine. Lessons in mensuration and even arithmetic may be taught from the school garden. Material for lessons on Nature Study should be drawn, as far as possible, from the school garden. Plants from the garden plots should be pulled up and utilized in the school room for lessons in Nature Study, Drawing, etc.

A "Cultural Wage".

The *Literary Digest* discusses the latest move in America in regard to the Labour problem. It writes:-

First a "living wage" was demanded by labour, then a "having wage," so that the worker not only could support himself and family in the face of increasing living costs, but could also lay aside something for old age. And now comes forward one of our great captains of industry declaring that industry in this country is moving toward the 'cultural wage' basis so that every worker will be in a position not only to make a living, but also to take advantage of the age. These remarks of Mr. Owen D. Young appear at a time when there is much discussion of wage levels on the part of the both capitalists and labour leaders. President William Green, of the American Federation of Labour, says in the *Atlantic City*, that "the earning power of the worker must keep pace with the increasing power of production". Julius Barnes, former President of the United States Chamber of Commerce, recently remarked in *Washington* that labour has given up in this country the "living wage" idea and accepted the theory that compensation should depend on the production results of labour. This discussion brings from the *Atlantic Journal* the observation that "nothing else is so costly to a nation as 'pauper' labour". And the *Pittsburgh Gazette Times*, one of America's greatest industrial centres, recognizing the aspirations of organized workers for themselves and their families, longing for spiritual and cultural comforts, thinks that they ought to concede that capital "has met labour more than halfway and has borne a full part in providing the means by which labour has advanced to a higher plane of satisfaction and contentment here than anywhere else in the world".

Trend of Modern Progress.

Mr. Owen D. Young made his contribution to the wage discussion in an address before the National Industrial Conference Board. He first expressed the view that "industry should be profitable". He knows of no way in which concerns can make profits "unless they render service, and, conversely, if they do not make profits they cannot render service". Then turning to the subject of wages, Mr. Young said :—

"Industry in this country is making progress toward the objective which I think should be sought. I believe we are making progress in the direction, not only of a living wage, but cultural wage, that which will enable the men to develop to such a point that they may take advantage of all the great opportunities which are offered to the citizens of the United States. When that time comes, then all men will be free and equal. The great objective of a free Government and of a high industrial order is to establish equality of opportunity for all men."

How far Mr. Young's conception of a cultural wage has progressed in our industrial system, the Boston Christian *Science Monitor* admits that it doesn't know; "but it does exist, and employers more and more seem to be striving in that direction". "The living wage won, American industry set out to obtain a new objective—the cultural wage." Thus speaks the *Syracuse Herald*, which praises Mr. Young's vision and foresight - "hitching the nation's industrial wagon to a star, Cultural Wage is service that is not yet measurable". An interesting discussion of the evolution in wage standards indicated by Mr. Young appears in a *New York World* editorial:

A Far Cry from the "Iron Law".

"It is a far cry from the 'Iron Law Wages' accepted by economists of the nineteenth century to the recent prediction of a 'cultural wage' by an American captain of industry. Upholders of the 'iron law' maintained that wages in the long run would tend to equal the bare means of subsistence. If they remained above this level by any appreciable period, the supply of workers would increase and depress wages to that level whereas if they fell below the minimum, the supply of workers would naturally decrease and wages would rise again.

"That law seemed to fit the conditions of the time when it was originated, but with subsequent industrial progress its fallacy became so evident that it was discarded by its own author, John Stuart Mill. In more recent years, the 'living wage' has been set forth as the great industrial desideratum, but this has proved a rather flexible concept. Secretary Davis started a controversy a short time ago by declaring that a 'living wage'; that it should not only enable the worker to live according to a certain standard, but should enable him to lay by something for the rainy day.

What is Cultural Wage?

"By a 'cultural wage' Mr Young means sufficient remuneration to enable workers to attain a degree of intellectual development which will make it possible for them to take advantage of whatever opportunity is offered them. That sort of wage when and if it comes, will ensure equal opportunities to all men, something which has existed heretofore only as a theory and an ideal. Obviously the country has still far to go before reaching this happy state; but Mr. Young's roseate prediction is significant for the same reason that the gloomy 'iron law' was significant. Both reflect the industrial conditions and prospectus of their time, and they show that we have already moved a considerable distance in the direction, Mr. Young says, we are going."

Labour's insistence upon a share in the increased productivity of modern industry was expressed by President William Green, the very day after Mr. Young spoke, at the Atlantic City Convention of the National Electric Light Association. These two sentences quoted by the *New York World* are characteristic:

"The American Federation of Labour holds that the earning power of the worker must keep pace with the increasing power of production.

"Life has been made more tolerable and living conditions have improved for the workers by electrical machinery, and the working man now more than ever is able to enjoy the blessings and benefits of modern life."

A slightly sceptical note, however, is sounded by the *New York Journal of Commerce*, which says:—

"When spokesmen for labour demand for it a due portion of the rewards that go with greater productivity, they frequently conceal a desire to claim for labour the whole of the increase, forgetting that it is labour in conjunction with more efficient capital equipment that has produced the better results. If all the gains of industrial progress were assigned to workers in the form of higher wages, the surplus available for capital investment would cease to grow and consequently standards of industrial efficiency could not be continuously advanced as they have been."

History and Financial Position of the South Indian Railway.

The *S. E. G.* sketches the history of the S. I. R. and in doing so describes it as an agency for working the system from which it takes its name under contract with the Secretary of State for India. "The railway is the property of the State. The Company has a capital of £1,000,000, all of which has been paid to the Secretary of State and by him invested in the railway. All the remainder of the capital has been provided by him from other resources. He guarantees the repayment of the £1,000,000 and 3½ per cent dividend upon it. The Company has an interest in the profits of the railway beyond 3½ per cent. The property of the Company is, therefore, the £1,000,000 of capital so invested, guaranteed and payable by the Secretary of State on Dec. 31, 1945, or later, and the dividends and profits accrued and accruing. Capital to the extent of £2,963,218 has been raised in debentures and debenture stock of the Company, and guaranteed by the Secretary of State, and similarly applied to the railway undertaking. The Company has no fixed assets, and an admirably lucid statement embodying these particulars accompanies the list of balances on the London books that is lodged with the annual summary at Somerset House in accordance with the Companies Act, and it is, perhaps, the most illuminating little monograph as to the peculiar status of the Company that is issued by any of the companies in this group that work a system for the State. It enables the interested person to obtain a true picture of what it is that he has a stake in and the nature of that stake." We then read:—

The lines formerly owned and worked by the late Great Southern India and Carnatic Railway Companies were amalgamated in 1874 under the title of the South Indian Railway, which on the first day of 1891 was purchased by the State and handed over, together with the Villupuram-Guntakal Railway for working as one undertaking, to a new company, the South Indian Railway Company, Limited.

Of the 446 miles, broad guage, of the South Indian Railway proper, 271 miles were opened as long ago as 1860 to 1862. In addition to the broad guage, 900 miles of metre guage and 90 miles of narrow, or 2 ft. 6 in. guage complete the 1,445 miles of lines worked by the Company on behalf of the Government of India. The Company also works 431 miles, practically all metre guage, for other owners, so that the total length of line worked is 1,876 miles. The system comprises a useful girdle embracing the Southern part of India, crossing it from Madras Beach through Salem and Erode to Shoranur, and thence up the west coast to Mangalore. Passengers contribute slightly more than goods to the gross earnings. The chief commodities carried are rice, other grains and pulse, timber, salt, fruit and vegetables, raw cotton and fodder.

Financial Position.

The Secretary of State guarantees 3½ per cent interest on the company's £1,000,000 capital stock. Net profits in excess of debenture interest, the guaranteed interest as aforesaid and interest at 3¼ per cent on the Government's capital are divided between Government and Company in proportion to the capital of each in the undertaking. The excess dividends paid by the Company out of these surplus net profits increased from 3½ per cent in 1911 and 1912 to 4¼ per cent in 1919 and 4½ per cent for each of the last six years, so that the receipt of a total of 8 per cent dividend has become a habit with the stockholders of late. The balance of surplus profits at September last was £130,000, or allowing for the final dividend and other debits to be paid in respect of the year to March, 1925—say £100,000.

Now the Secretary of State will have the right, on giving a year's notice, to determine the contract on the last day of 1945, or on the last day of any fifth year thereafter, on repayment at par of the Company's capital, so that the worst that the stockholders of this Company, whose main asset is an agency to work a railway which it is allowed to finance to the extent of one-fourteenth part or thereabouts, could receive on such determination would be par, less the expenses of liquidation. Any addition to that would have to come from the savings of the Company as cited above, the undistributed balance of the Company's share of surplus earnings so far accumulated with such additions as may be made in the next twenty years. When, therefore, we see South Indian Railway stock priced at 120 in the market it is easy to see that on dividend it is not priced very high, while on dividend prospects good judges believe it to be low, but it is also easy to see that, with a view to the contingency of determination of contract twenty years hence, at least another £100,000 of savings will need to be in hand if the price of 120 is sound. That means an addition of £5,000 per year on average for that period. Accretions of that amount in that period will be more than produced by compound interest arising from the fact that the balance is kept invested. Therefore, if the earned interest is always added to the fund—the equivalent of the ordinary trading company's "carry forward"—and the fund is never cut into in order to make us a dividend, and the fund is kept invested with proper skill and care, then the very proper note which appears against the yield per cent in regard to the stock in investment lists—"Ultimate extinction or loss of capital not allowed for" may already be regarded as supererogatory.

Government cannot terminate the contract before 1945, and there can be no certainty that it will do so then. The ability of the Company to maintain 8 per cent dividend until then is, of course, of first-class importance to the holders of the stock, among whom are a number of trusts covered by the Government guarantee of 3½ per cent and holding at a price below 115. It has been a developing system down to the present time, and the net earnings have latterly more than kept pace with the increase in total capital outlay. The course of gross and net earnings from the abnormal year 1918-19 on virtually the same mileage is of interest. The Company's year ends with March and the accounts appear in September:

		Rs.	Rs.
1924-25	...	4,96,15,859	2,25,99,845
1923-24	...	5,07,03,902	2,17,95,199
1922-23	...	4,88,99,408	1,41,84,720
1921-22	...	4,40,05,089	1,21,45,892
1920-21	...	4,07,28,016	1,58,91,017
1919-20	...	4,01,49,515	1,82,46,245
1918-19	...	8,56,35,133	1,96,05,247

LAST YEAR'S PROFITS.

On last year's record net earnings, the surplus divisible between Government and the Company, was Rs. 1,18,22,781, and the Company's share was Rs. 7,78,028. This was swelled by an adjustment on account of refund of customs duty to

Rs. 7,82,446

from which there was retained in India to meet Indian income-tax and super tax for 1925-26

Rs. 1,19,132

Leaving a balance of Rs. 6,68,314
which was remitted to London as .. £49,667

and from that is paid the additional 4½ per cent on the capital stock that made up the 8 per cent. The course of exchange has a material bearing on dividend and accumulation of reserve. On the earning prospects the capital stock appears to be a reasonable investment and the market is not likely to let the price go much higher than the real redemption value of par *plus* the value of reserve projected to maturity.

Books in Brief.

Short Reviews of Recent Books.

Punjab Board of Economic Enquiry—Some Recent Publications.

We have drawn the attention of the readers of this journal to the very useful work done by the Punjab Board of Economic Inquiry and reviewed in these columns a few of their publications. The following three pamphlets keep to the level of excellence and usefulness that we expect from the publications of the Board:—

I

Sixty Years of Punjab Food Prices, 1861-1920.

By Prof. W. H. Myles, M.A., Professor of Economics, University of the Punjab, pp. 52. (Price 10 annas.)

This pamphlet is remarkable not only for its conclusions, but the method that such investigations should follow in other Provinces. Though Prof. Myles falls back on the official figures of prices, not always a correct record—he makes use of the most approved statistical method in drawing his conclusions. One charge against this method is that, in the words of Prof. Myles, "if men are out to prove any particular case they can do so easily by manipulation, and by leaving out the essential qualifications," but we can say that, on the whole, our author has avoided these pitfalls.

We can no more than point out the main conclusions of our author—

(1) Wheat, barley, bajra and gram tend to move in price as though they were one commodity. The explanation is that the law of substitution is in operation in the case of the main foodgrains. Wheat, the staple food, has been subject, however, to smaller fluctuations in price than the others.

(2) There is a tendency for high prices to appear about the time when the figure in the decennium charges and for lower prices to prevail about the middle of the decennium (*i.e.*, once in every ten years). This cyclical movement supports the view of the late Mr. Jevons, the originator of the sun-spot theory of crisis.

(3) From about 1885 onwards the prices in the different districts tend much more strongly towards equality. The cause is undoubtedly to be found in the improved means of transport within the Province.

(4) In recent years, especially since 1905, there has been a rapid rise in the *general* level of Punjab food prices. Prof. Myles looks for an explanation in the Quantity Theory of Money.

Altogether a most interesting and useful study which will help the investigators in other Provinces to make similar surveys.

II

The Rates of Food Consumption by Zamindars

in the Tallagang Tahsil of the Attock District, by C. B. Barry, M.A., I.C.S., Settlement Officer, Attock, pp. IX, 16 (6 annas).

This is a reprint of an official report by Mr. Barry, a Settlement Officer, who worked out the details of food consumption of the cultivating classes in the Punjab for the purpose of assessment. Mr. Calvert, whose studies regarding Punjab economic conditions have made his name familiar to students of Economics, contributes an introduction in which are given the opinions of several eminent Punjab Civilians and others on the figures collected by Mr. Barry.

Mr. Barry concludes that among the cultivating classes men (between the ages of 15 and 60) take an average of 7½ maunds of foodstuffs per year or about 26 oz. per day: after 60, a man takes 6.5 maunds. A fair rate for women of the zamindar class between the ages of 15 and 50 will be 6.5 maunds per year; from 50 to 59, 6 maunds and 60 and above, over 5.5 maunds. After giving similar figures for children of different ages, the writer concludes that the all-round rate of consumption of foodgrains thus works out at 5.37 maunds per head per year.

Mr. Barry assumes that the rate of consumption for non-zamindars (*i.e.*, non-cultivators) is less than for zamindars by nearly one maund per year as the former has to do less manual work. Though physical exertion factor is of some importance we are on the whole inclined to support the view of a critic of Mr. Barry's estimate that "the Indian—like most other people—takes great pleasure in eating, and I cannot but think that the physical exertion factor is of comparatively minor importance; body weight, state of health, financial considerations and above all idiosyncrasy are the chief determinants of the amount of food consumed."

III

The Economic Value of Goats in the Punjab.

By H. R. Stewart, I.A.S.

This is a reprint of an article from the *Indian Journal of Economics*. Goats in the Punjab represent 14 per cent of the total in India but are not yet sufficient to meet the demand as evidenced by the imports of about 50,000 per year. They are valued alike for their milk and manure. The writer combats vigorously the view held in some quarters that goats, as destroyers of forest growth, should be legislated out of existence. "We cannot do without the goat in the Punjab, but the number to be kept, the conditions under which they could be kept, might be regulated so that this animal will be a benefit to the community and to the State, as well as to the owner."

S. Subbarama Aiyar, M.A.

Aims and Methods of Education in India.

Mr. A. Mayhew, C.I.E., formerly of the Madras Education Department and late Director of Public Instruction in the C.P., in his recently published book "The Education of India" summarizes the aims, methods and results of British educational policy in India. He lays stress on the following five conclusions which deserve consideration:—

(*a*) Our education has done far less for Indian culture than for the material and political progress of India. She looks to our Schools and Colleges for equipment in the struggle for existence; for the secret of happy living, *vivendi causae*, she looks elsewhere.

(*b*) Emotional reaction against foreign culture affords no soil for indigenous growth. The sympathetic application of critical and scientific methods to Indian life and thought, and the adoption of a "Western" attitude of mind, must precede the fusion of East and West that India's wisest minds desire.

(*c*) Indian personality and life as a whole will not intimately be affected by any education which is not animated by religion. The forces which oppose progress can be restrained or diverted only by a religion more vital than those on which they depend for sanction.

(*d*) Higher education in India depends for warmth and colour, vitality and response to communal aspirations, on the measure of its freedom from the control and direction of any form of government whether Indian or alien. The function of Government in this sphere is to suppress what is harmful to the commonweal and to support with the utmost elasticity, whatever is useful and effective. But for the better education of the masses, as a fundamental condition of national progress, a vigorous initiative must be taken and a financial policy prescribed by the Government.

(*e*) At no previous stage has Indian education needed more sorely western sympathy, support and guidance. English educational work in India will be more deeply appreciated and more fruitful when it is not associated officially with an alien Government.

"These conclusions," says Mr. Mayhew, "have emerged from a three years' survey of my Indian experience carried out in the light of my early studies in Germany and recent observations in England. My work in India began at a time when Education Department was inspired by Lord Curzon's vision and energy. That vitality was never lost. I saw an educational bureaucracy at its best. But I was convinced on my return, that English schools and universities with all their anomalies and lack of arrangement, possessed the vital spark so sadly lacking in the precise system of Germany and India. And I felt surprised and sorry, that in an official atmosphere, I had grown so very un-English."

A Cotton and Exchange Chart.

We have received from Mr. Chunilal B. Mehta, Editor of *Cotton and Exchange*, a copy of his neatly got-up "Cotton and Exchange" chart. The last issue met with such great approval on the part of public in India and abroad, that he has done well to meet the demand for a like chart for this year. In the present issue the Rupee-Sterling quotations are not graphed for the reason that the same fluctuated only within a very narrow range, and in place of the graph devoted to them originally is given to Liverpool opening quotations, which, we agree, will serve as an important and useful reference to many. We are asked to announce that Mr. Mehta will be glad to have any inquiries regarding Cotton, Exchange, Bullion and Investments.

An Announcement.

Messrs. P. S. King & Co. Ltd., Orchard House, 14, Great Smith Street, Westminster, announce that they have in the press a work on the Cotton Growing Countries, Present and Potential (International Institute of Agriculture, Rome). About 300 pages, with separate chapters for each of 79 Countries, of America, Africa, Europe, Asia and Australasia.

It is sought, in this volume, to deal with every one of the 79 countries included, by means of separate chapters, embodying under each heading the special circumstances influencing the cotton crop in that particular country, while recording a series of details common to many of them. The basis of the work is statistical, therefore the data of areas under cotton and of annual production lead the way. These are furnished, where available, for the past twelve seasons with averaged figures for the five pre-war years from 1909 to 1913. Price 12*sh.* 6*d.*

Nasal Municipal Museum.

A proposal for the establishment of a municipal museum of speech and gesture is made by a member of the Paris Council. Put shortly, it is contended that a systematic collection of films and gramophone discs would be of great value and interest to the coming generations. Contemporary life might thus be indelibly recorded. The elements of such a collection, it is pointed out, already exist. Discs and films are constantly being made which set down important events and persons for eyes and ears, but there has not been so far any attempt to classify and preserve these discs and films in a museum as is proposed by the Paris Councillor. He wishes the museum to be installed in some public building near the Sorbonne. It is recalled that the suggestion is by no means new.

Mysore Economic Conference.

Address by Amin-ul-Mulk Mirza M. Ismail, O.B.E., C.I.E., Dewan of Mysore.

[We give below the full text of the Address delivered by Amin-ul-Mulk Mirza M. Ismail, O.B.E., C.I.E., Dewan-President of the Conference, at the Mysore Economic Conference, held at the Public Offices, Bangalore, on 30th July, 1926.—Ed., M.E.J.]

Gentlemen,—The Economic Conference was started in our State, as you are all doubtless aware, towards the middle of the year 1911 or nearly fifteen years ago. To-day we are inaugurating the Sixteenth Session of this movement. The main purpose of the Conference is to stimulate interest and initiative among the people in bread-winning occupations, along lines of effort, popular in western countries and in Japan,—efforts which have enabled many of those countries to raise their standards of earning and living far above the Indian level. It was considered that problems relating to wealth creation should receive special treatment, as distinct from those of general administration, and that the solution of many of them could be successfully attempted only by the joint action of the Government and the people.

Brief History of the Conference.

It is not my purpose to give you a detailed history of the Conference to-day. Its inauguration synchronized with an era of general prosperity and the movement was taken up with a certain amount of enthusiasm by the public. It will be sufficient to state that, in spite of the difficulties created by the outbreak of the War, considerable spade work was done by the Conference during the first eight years of its existence. Statistics pertaining to the economic condition of the people were collected and rough estimates of production, etc., prepared with the aid of the Deputy Commissioners and District Economic Superintendents, and much useful information, which every citizen ought to know, was published in district and other handbooks. Numerous questions relating to the economic regeneration of the country were discussed by Committees composed of officials and non-officials, the discussions led to concrete proposals and some of these in turn were translated into practical action. The activities of the Conference led among other results to a large expenditure on education, the establishment of the University of Mysore and of the Bank of Mysore and the creation of a Department of Industries; and several industries, large and small, were started. For the first time, Government recognized their responsibility for active co-operation with the people in promoting their economic uplift.

In the year 1919, the organization of the Conference underwent a change, and work pertaining to rural economic development was transferred to the care of the District Boards. This was followed by a period of financial stringency when expenditure on all optional activities was curtailed. In July 1922, the butget of the Conference was reduced from Rs. 3·5 lakhs to half a lakh, and in May 1923 the organization itself was suspended. It was, however, revived in the following year along with the Constitutional Reforms when, in pursuance of a previous promise of His Highness the Maharaja, the Conference was made a permanent adjunct of the administration. It is the intention of His Highness' Government to resume the activities of the Conference as rapidly as circumstances permit, and to this end, the grant for the current year has been fixed at Rs. 1 lakh. We have now to decide how best to advance the activities in the coming year with the aid of these additional resources at our disposal.

Economic Investigations in British India.

In inaugurating economic activities, our State may be said to have broken new ground. An Economic Conference has since become an annual event in British India. The year that has just past is remarkable for the number of inquiries on economic subjects conducted in British India. The Report of the Indian Economic Enquiry Committee has emphasized the need for a comprehensive survey of the production and resources of the country and the income of the people. The Indian Taxation Inquiry Committee, presided over by Sir Charles Todhunter, has exhaustively analyzed the taxation resources at the disposal of the Government of India.

Reuter recently wired that the Royal Commission on Indian Currency has signed its report, and we await, with the keenest interest, the findings of that body which will be made public in the next few days. Their recommendations will probably have a far-reaching effect on Indian trade and industries generally, and they will also affect our own revenues.

I am sure you have all heard, with gratification, the announcement that a Royal Commission to enquire into the technical and economic aspects of Indian agriculture is about to start work. Agriculture is our greatest industry, and an examination of its many problems and proposals for its improvement in British India cannot fail to awaken the widest interest among the people of our own State.

Education.

As remarked before, the activities of the three Boards were somewhat circumscribed last year on account of the limited funds at their disposal. The Board of Education considered several subjects during the year, chief among which were the co-ordination of technical and general education, standardizing equipment in schools, revision of rules for the distribution of backward class scholarships and the provision of higher academic training to graduate teachers. The education so far imparted has paid scant regard to the practical needs of life and further developments should, therefore, be in the direction of promoting practical education of all grades. It is difficult to procure the services of young men whose hands and eyes have been trained for manual or mechanical work. As a consequence, many young graduates of our middle class are unable to find suitable employment. The liberal professions to which their training fits them are overcrowded, and the vacancies in the administrative services can absorb only a very small percentage of the yearly output of our University.

Vigorous measures are needed to stimulate practical pursuits. The technological side of instruction in our University needs strengthening but there are limits to further expenditure. Already the expenditure on education is taxing our resources to the utmost

Agriculture.

In agriculture, the greatest obstacle to improvement is the small areas and the scattered situation of the raiyats' holdings. Under existing conditions, there is tremendous waste of labour and the application of mechanical energy is necessarily precluded. It is estimated that the total yield from agriculture would be increased by at least 25 per cent, if the holdings could be suitably enlarged or the lands cultivated under some system of co-operative farming. I would invite the attention of our Agricultural Board to the experience of the Punjab in this respect.

It seems a blot on our agriculture and on the splendid tank system in Mysore, that nearly 20 per cent of the rice consumed in the State should be imported annually from outside. This is no doubt due, in a great measure, to the deterioration of our tanks. We can grow enough rice in the State if energetic measures are adopted for tank restoration and if the construction of the Cauvery high level canal from the Krishnarajasagara is expedited. Proposals for the utilization of the surplus waters impounded in the Krishnarajasagara are under active consideration.

Industries and Trade.

The policy of encouraging large industries has been pursued to a reasonable extent. It must be known to some of you that one or two of our large business concerns were in difficulties last year and Government used their good offices to help them out of their troubles. We mean to follow the same policy in future although we have no wish to pledge the taxpayers' credit to prop up industries which have an unsound business organization. Government do not propose to pioneer any large undertakings, unless their remunerative character is known to be beyond doubt.

Agriculturists are badly in need of subsidiary occupations. Sericulture is growing in popularity as a lucrative occupation. Cotton spinning by means of the *charka* is another which seems to deserve a place in our social economy.

The minor industries started as a result of the activities of the Economic Conference are reported to be labouring under difficulties for want of working capital. Some scheme seems necessary not only to provide this working capital, but also to help in finding the initial capital needed for starting new cottage industries. Minor or cottage industries should be rendered popular, and at the same time thrift should be promoted, by vigorous propaganda in every city, town and village.

Mysore has always been known to be rich in mineral resources. Although Government cannot take part in the highly speculative enterprise of mining, they can do some more active work and obtain a sale in foreign markets for ores in which our country is rich.

Further utilization of forest products should also be attempted. It is proposed to erect at an early date a sleeper treatment plant, under the supervision of the Forest Department, with a view to utilize the wood creosote manufactured at the Bhadravati Iron Works.

Statistics of rail-borne trade for the year 1924-25 are now available. The total trade during the year is valued at Rs. 25·45 crores being the same as in the previous year, the value of the imports being about Rs. 12·47 crores and of exports about Rs. 12·98 crores. If we deduct from these figures the total value of the trade due to the Gold Mines, which is an industry conducted under exceptional conditions, the imports seem to exceed the exports by about Rs. 1½ crores. The trade must, of course, be balanced by other invisible exports and how this is happening is a matter for investigation by our Economic Board.

The lack of employment for middle classes and the under-employment among the rural classes is intensifying the poverty and distress in the country, and the economic situation at the present day calls for the most anxious consideration that the Government and the enlightened public can give to it. It is obvious that the situation cannot be met without multiplying occupations to absorb the energies of our people.

Future Organization.

The Conference, as now revived, differs from the original organization in several important respects. The Central Boards are practically independent of the main body, *viz.*, the Economic Conference, which meets only once a year, to review the work of the Boards and to make suggestions. But otherwise, there is no direct connection between these various bodies. In the long interval between any two sessions, there is at present no arrangement for taking stock of the work done or for joint meetings of the Boards, nor for any proper system of co-ordination. The first step needed to make these bodies more useful is, therefore, to bring them into closer touch with one another and with the Departments concerned and the Government.

It is represented to me by officers who have been closely associated with the Conference from its inception that the constitution of the three Central Boards, as entirely independent entities with no direct relation to the Economic Conference, has not led to satisfactory results and that if the Conference is to show sufficient vitality, it may be necessary to revive the old organization as a whole or in part. It has also been impressed upon me that the absence of a proper agency in the districts to attend to their economic requirements has proved a serious obstacle to the achievements of any practical results.

Conclusion.

I will, therefore, before concluding, briefly refer to a few principal measures which seem to be urgently called for to improve the working of this organization:

(1) A survey of resources and of production in the State seems overdue and early steps should be taken to compile estimates of annual production in the districts.

(2) The Central Organization should be directly connected with the Boards, and a Standing Committee should meet periodically to review the work of the Boards and revise their programmes.

(3) The Economic Conference should have a Secretary, to act as a co-ordinating and unifying agency.

(4) The appointment of District Economic Superintendents should be revived. As past experience has shown, these officials will be very useful for collecting economic data, for mobilizing the available resources and focussing the attention of the thinking public on problems of immediate material improvement.

(5) The District organization should be improved. Special grants should be given for economic work in the districts to supplement those supplied by the District Boards.

These measures, to my mind, as remarked already, seem to require immediate attention. I must confess I have not yet gone thoroughly into all the details of this once complex organization. I shall be glad if the representatives of the three Boards formulate definite proposals under the various heads I have mentioned, including any others that they may see fit to add, and prepare a working programme for the coming

year. The work of this Conference has had its ups and downs. We will be wise in future to maintain our activities on a moderate plane but keep up a steady stream of work. Anyway, we begin our labours with some additional funds this year and, if we also start the year's work with a definite programme, I am sure when we meet again we shall be able to review, with some degree of gratification, evidences of useful work accomplished, as a result of your efforts and of those of the Government Departments concerned.

American Trade with India.

The following statistical matter is based on cable received from the Department of Commerce, Washington, D. C. :—

Exports and Imports.

Total imports into the United States, April, 1926	$397,964,000
Total exports from the United States, April, 1926	$387,871,000
Excess of imports over exports	$ 10,093,000

Trade with India.

Imports from India to the United States, April, 1926	$ 15,594,000
Exports to India from the United States, April, 1926	$ 4,216,000
Excess of imports over exports	$ 11,378,000

Some of the more important items *exported* from the United States to India during April, 1926, were as follows :—

Canned fruit	75,000 lbs.
Dyes	68,000 lbs.
Kerosene oil	4,397,000 gallons.
Lubricating oil	1,345,000 gallons.
Machinery, all kinds	$ 673,000
Tinned sheets and plates	2,132,000 lbs.
Tubes, pipes and fittings	1,272,000 lbs.
Bolts and nuts	33,000 lbs.
Automobiles (American)	199
Automobiles (Canadian)	471
Trucks (American)	109
Trucks (Canadian)	293

Some of the more important items *imported* into the United States from India during April, 1926, were as follows :—

Burlaps	62,230,000 lbs.
Jute, raw	5,000 lbs.
Cotton, raw	1,124,000 lbs.
Goatskins	2,751,000 lbs.
Shellac	876,000 lbs.
Castor seed	4,537,000 lbs.
Manganese ore	3,000 tons.
Myrabolams	1,000 tons.
Wool	87,000 lbs.
Mica	4,82,000 lbs.

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Detailed Contents.

	PAGE
AGRICULTURE AND NITROGEN— *By Dr. William S. Myers*	.. 331
AGRICULTURE IN BENGAL, 1923-24— *By "Bystander"*	 334
FISHERIES IN MADRAS— *By Christopher Hay, M.A.*	.. 337
METHODS OF EARTH ROAD MAINTENANCE— *By Collis Johnson, General Sales Manager, Stockland Road Machinery Company*	 339
BREAD-EARNING PROBLEM, II— *By Jamshed N. R. Mehta, President, Karachi Municipality*	 340
INDUSTRIES IN BARODA STATE, 1924-25— *By G. V. Rajaratnam*	 342
NOTES ON CO-OPERATION— *By the Editor*	 343
ECONOMICS IN THE WEST	 344
ECONOMIC NOTES FROM LONDON	.. 349
CANADIAN TRADE AND FINANCE	.. 352
SESQUI-CENTENNIAL INTERNATIONAL EXPOSITION	 354
INDIAN ECONOMIC NOTES	.. 356
TOPICS IN THE JOURNALS	.. 360
BOOKS IN BRIEF—	
The Economic Problem	 366
The Economics of Leather Industry	368
Socialism for To-day	 368
The Indian Colony of Champa	.. 368
ACKNOWLEDGMENT	 368
SUPPLEMENT—	
Report of the Royal Commission on Indian Currency and Finance	.. 1-7

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Agriculture and Nitrogen.

By Dr. William S. Myers.

In his first inaugural address Washington said "Where agriculture leads all other arts follow". Most of the annual additions to our national wealth come from farming and our agriculture is still growing. The land is the foundation upon which we build our economic structure.

The world taken as a whole is a great farm and our soils are filled with millions of microscopic animal and vegetable life—vast colonies of living things which act and react upon each other, every square yard is populated with billions of workers and unknown labourers—some helping as soil builders—some helping in the work of unlocking fertility—some, under certain conditions, helping to destroy it.

The average soil is capable of holding more or less one-fifth of its weight in water. The greater the soil population of bacteria bred by proper farming, the greater is its capacity for holding water and soil solutions. Good soils also possess great holding capacity for solids in solution owing to the capacity of soil granules to exercise upon liquids what is known as surface tension. So far as growing crops are concerned a soil without water is as useless as a motor car without gasoline.

The possibility of utilizing the legumes has been known since the time of the Roman although they did not know it was nitrogen that was thus captured. The potency of nitrogen in agriculture has been known for years and has been studied especially lately by leading agriculturists.

The wide distribution of this element in nature is remarkable. Its occurrence is universal. We may fly to the uttermost parts of the earth and it is still with us. Throughout the world it remains substantially in the same proportion to the oxygen of the air, although the atmosphere is supposed to have been once all nitrogen.

Nitrogen is found free not only in the atmosphere but in certain mineral waters and in volcanic gases. It is never absorbed by animals or plants from its elementary state, except through the agency of certain soil bacteria associated with leguminous plants, and when these are located on favourable soils carrying sufficient lime in proper form.

The inactivity of elementary nitrogen is notable. Its compounds, on the other hand, frequently have pronounced unusual properties, they being the essential components of powerful drugs of brilliant dye-stuffs and of high explosives. In its combined form it is widely and universally distributed in the animal and vegetable kingdoms in albuminoid or proteid bodies, like the casein of milk, or the gluten of wheat. Vast quantities of combined nitrogen occur in Chile in mineral deposits; it is found combined in all arable soils; also in coal. In each of these instances these forms are the product of bacteria or other life. The chemistry and physiology of nitrogen is the chemistry and physiology of living things. Without nitrogen there could be no life as we understand it. It is absolutely essential to all organized life. In view of this it is all the more remarkable how completely inert the element nitrogen is, and how tremendously potent and active are some of its combinations.

Making Nitrogen Available.

The nitration or proper predigestion of plant nourishment cannot occur without some basic substance being present and can only best proceed at favourable summer temperatures.

in proportion to the development of transportation facilities.

The railway man has an opportunity for observation wider far than the average citizen and his views by virtue of this opportunity are bound to be broad-minded. His opportunities for service are, therefore, unusual in respect to public relations. Your attitude towards the unforceable obligations in your sphere of action has been fine and admirable. Your service has been unstinted. Your work more than any other agency has put souls into the bodies of corporations.

The test of an institution or a corporation or of a nation lies in its attitude toward the unenforceable obligations of life. I do not mean merely in respect to the attitude toward "scraps of paper". All of us here are aware of the obligations of the written word, but what is our attitude toward the unenforceable? One of the oldest treaties in this country was between William Penn and the Indians. This was never sworn to and never broken, but it worked admirably. The measure of a man in all his relations in life is his attitude towards his unenforceable obligations. In our hearts we know that the communities we serve will measure us by it.

Agriculture in Bengal, 1923-24.

By "Bystander".

During the year 1923-24, Mr. R. S. Finlow held charge of the Department as Officiating Director during the absence on leave, preparatory to retirement, of Mr. G. Evans, whose reports we have reviewed time and again in these pages. The Director of Agriculture reports that no progress was made in nature study in the primary schools during the year, and that this was due in part to the want of proper gardening facilities in the majority of the schools. The Secondary Agricultural School at Chinsura was closed in 1924 as a result of the recommendation of the Bengal Retrenchment Committee. Negotiations are now in progress for handing over the school to a private educational body, which has undertaken to manage it on approved lines. The Secondary Agricultural School at Dacca suffered from a lack of students: there is accommodation for about 30 students, but only 14 seats were filled up last session. This falling off is attributed to the absence of immediate prospects of Government employment for the passed students. The fact that all the 14 students at present in the school intend to go back to the land is, however, a satisfactory feature.

The great importance of introducing an agricultural bias in the secondary schools in the rural areas of the province is obvious, and stress has recently been laid on this question in the report of the Bengal Unemployment Committee as a means of popularizing agriculture as a profession among the educated middle classes. Examples of ordinary schools where agricultural subjects, theoretical and practical, are included in the curriculum, are afforded by the Amarpur School in the Burdwan district, the Durgapur High School in the Chittagong district and the Ashabarea Middle English School at Asansol. Special interest attaches to the good work which is being done at the Amarpur School in this direction. In December 1924, a Conference on agricultural education was convened by Government. The Conference considered it desirable to reconsider the present curricula of country schools above the primary standard in Bengal so as to introduce the experiment of teaching elementary agriculture combined with practical work in the field. In accordance with the recommendation of the Conference a small committee consisting of an officer of the Agricultural and of the Educational Department and a non-official gentleman was deputed to the Punjab to investigate the possibilities of the introduction of agricultural classes in middle schools in Bengal on the lines which have proved successful in that province. This committee has since submitted a report which is receiving the careful consideration of Government, and it is hoped to introduce a scheme of secondary agricultural education specially suited to the conditions of this province.

The provision of facilities for higher agricultural education in the province depends on the establishment of the proposed Agricultural Institute at Dacca. This scheme is being re-examined by Government with a view to the possibility of finding funds for its inauguration in the near future.

Interesting experiments are, we note, in

progress into the quality of the fibre produced by departmental and other races of jute under different conditions; the incidence of fungus disease in jute; the commercial possibility of rhea, sida and agave fibres and into the types of paddy suitable for different soil and climatic conditions prevailing in various parts of the province and especially in the dry upland tracts of west Bengal. The mycological section is occupied in investigation into a disease which has been causing serious damage to the betel-vine plantations over a wide area.

Investigation on the mango weevil is reported to have confirmed the view that cleanly condition of the soil is an effective preventive; while lack of drainage is reported to create a suitable environment for the *ufra* disease of the deep-water paddy.

The *tanna* variety of sugarcane continues to increase in popularity over a very wide area. The extensive adoption of the cultivation of this variety of sugarcane has materially increased the profits of the cultivators. The Director of Agriculture reports that in the Kishoreganj sub-division alone the area under this variety of cane has increased from 100 to 10,000 acres in four years. An officer of the Provincial Agricultural Service has been employed on the work of distribution of setts of this variety and of securing their widespread adoption. It appears, however, that the Coimbatore hybrid sugarcane, known as Co 213, promises to prove even a better yielder than *tanna* as well as an yielder of purer juice besides being an excellent drought resister.

The question of improvement of the date-sugar industry in Bengal is engaging attention, and funds have been provided for an investigation in the matter in the date-growing areas of the province. The work on tobacco has recently been placed under the charge of the Agricultural Chemist with the assistance of a Superintendent of Agriculture specially trained in tobacco cultivation. It is hoped that this arrangement will lead to an extension of the cultivation of good varieties of tobacco in the province so as to afford opportunity for the growth of a thriving industry in cigar manufacture.

Important experiments with cotton are being carried on by the Second Economic Botanist. The work consists chiefly in the selection of suitable types of cotton yielding good lint. Results of the experiment so far obtained have led to the belief that a type suitable to the high lands of Western Bengal would be evolved in the near future, and it is proposed shortly to transfer the headquarters of the Second Economic Botanist from Dacca to Western Bengal in connection with this work.

The problem of effectively dealing with the water hyacinth pest has been engaging the serious attention of the Bengal Government for some time past. Experiments with Griffith's spray have so far shown that it is not innocuous to human beings and animals as was originally believed. It has been found, however, that although spraying is not effective in killing the weed completely, it affords useful help in the removal of the weed by manhandling and other mechanical means. The Irrigation Department is carrying on experiments with a view to keeping the navigable channels in charge of that Department free from the weed. It is recognized, however, that the whole-hearted co-operation of local bodies and of the public generally is essential for success in an intensive campaign against the pest in view of its extensive nature and of the necessity for simultaneous and concerted action. It is proposed shortly to place an officer of the Provincial Executive Service on special duty in order to organize concerted action in selected localities for the eradication of water-hyacinth in co-operation with the District Officers and local bodies, and it is hoped that the necessary public support will be forthcoming in organizing an effective campaign against this pest in the ensuing dry season.

It is the accepted policy of the Bengal Government to have an agricultural farm in each district in which the local conditions will be studied and the results of experiments demonstrated to the public and provision is being made to start two district farms every year. With the object of demonstrating to the public the profitableness of agriculture as a profession if conducted on the lines recommended by the Department, it has been decided to run the demonstration portion of each farm on business lines. Closely connected with the question of farming is that of animal husbandry. The problem of evolving a better breed of cattle and securing a better milk supply is under investigation at the Rangpur Cattle Farm and at the Central Farm at Dacca. At Rangpur experiments have been undertaken to evolve a dual purpose animal- the males being good plough bullocks and the females good milch cows—by mating pedigree bulls with *deshi* cows; and a very valuable herd has already been built up by this process. Young bulls of good stature and carrying a milking strain are being distributed to district farms and 12 to

20 young pedigree bulls are now available for sale each year. The Director of Agriculture has mentioned with regret that although there is a considerable demand for these pedigree bulls from such outlying areas as Assam, the Bengal public have so far failed to recognize that these animals, carrying as they do a good milking strain, are quite cheap at the price charged, *viz.*, Rs. 300 to Rs. 350 per animal. Government share the Director of Agriculture's hope that Court of Wards estates, enlightened zamindars as well as well-to-do cultivators will take full advantage of the opportunity now afforded of purchasing these bulls at the moderate price which is being charged for them. Investigations are in progress in Dacca and Rangpur with a view to discovering the most suitable fodder crops for the various parts of the province. Leaflets containing simple instructions on the subject of animal husbandry, fodder, silage as well as cattle disease and their treatment are under preparation. The question of irrigation is of vital importance to the farming industry, especially in the uplands of Western Bengal. Considerable progress has been made in the districts of Bankura and Birbhum in solving the problem of irrigation with the help of Co-operative Irrigation Societies and the example of these two districts has spread to the neighbouring districts of Hooghly, Burdwan and Midnapore. Technical assistance is being afforded by the Irrigation Department towards the preparation and execution of schemes taken up on co-operative lines and the Co-operative Department has been provided with the necessary staff for the organization of Co-operative Irrigation Societies. In other parts of the province also there is need for the re-excavation of tanks and construction of irrigation channels for agricultural purposes. The Bengal Agricultural and Sanitary Improvement Act was passed in 1920 to facilitate the carrying out of projects of this nature. Hitherto, however, advantage has not been taken of the provisions of this Act by the public. As there appeared to be some misapprehensions prevailing regarding the requirements of the Act, a simple set of instructions in the form of introduction to the Act and the rules thereunder, has been issued for the information and guidance of the local officers and intending applicants and it is hoped that this will lead to resort being widely taken to the provisions of the Act for the improvement of agriculture.

As a result of the decision of the Bengal Government on the recommendation of the Local Retrenchment Committee the seed stores established by the Department outside the farms have been abolished. This seems a retrograde step. There is a widespread popular demand for departmentally improved seeds. These seeds have been evolved as a result of careful scientific observation and unless they are propagated under proper safeguards, the useful work of the Department in this direction will be lost to the public. It has, therefore, been found necessary to utilize private agencies for the purpose of their distribution in addition to the departmental agencies and farms. The assistance of local officers and the panchayats is also being utilized in areas in which there is scope for popularizing departmental races of crops.

The successful demonstration of improved methods of agriculture with a view to their general adoption by the cultivating classes is an important function of the demonstration branch of the Agriculture Department Hitherto owing to a lack of co-ordination between the work of the research and demonstration branches sufficient progress has not been made in this direction. This defect is now sought to be removed by the appointment of an Assistant Director of Agriculture who will, for the present, be in charge of the demonstration branch. The Director of Agriculture realizes that the question of local organization for propaganda in regard to departmental recommendations is the most serious problem which at present confronts the departments. It is reported that in those districts in which the local officers have interested themselves in the matter of agricultural improvement there has been a great advance in agricultural practice. Government agree with the view expressed by the Director of Agriculture that the District Officers may effectually use their influence in encouraging khas mahal and Court of Wards estates and local zamindars to demonstrate improvements recommended by the Department of Agriculture. The Director of Agriculture has given interesting figures as to the enormous possibilities of increasing the wealth of the cultivators of the province by the widespread adoption of departmental races of several crops and in particular of jute and paddy, and it is only necessary to evolve a simple machinery by which the cultivators of the province can be brought into close touch with the officers of the Agriculture Department with a view to their testing and adopting these improved races of crops as well as other improvements recommended by the Department.

Government are convinced that the agency of agricultural associations will be found most effective for this purpose. Every effort should therefore, be made to utilize agricultural associations for the popularization of the results of scientific research and the adoption of improved agricultural practice. The policy of Government in regard to the formation of agricultural associations was fully enunciated in their circular No. 631 T.—R., dated the 7th June 1919, and it is hoped that the Assistant Director of Agriculture, who will henceforth be in charge of the propaganda branch of the Department, will devote his special attention to the organization of agricultural associations. Mention has been made in the report of the good work which is being done by the agricultural associations in Birbhum, Kishoreganj, Nadia and Jessore, and since the close of the year the Director of Agriculture has brought the good work of the agricultural association at Malda to the notice of Government. The Governor in Council trusts that the examples of these associations will be emulated by those in other districts.

The work of the sericultural branch embraces the production of disease-free seed cocoons by a method of selection at Government nurseries and their multiplication through the agency of selected rearers under departmental control. There are now no less than 36 seed farms under selected rearers to whom they are a source of considerable profit. The policy of encouraging selected rearers will be continued and extended by increasing the inspecting staff as funds permit. Eight *ex*-students of the Sericultural School were granted rewards of Rs. 250 each for the erection of model rearing houses. A great expansion of sericultural operations has taken place in the district of Bankura under departmental supervision. Rearers' and Reelers' Co-operative Societies are reported to be doing good work in several districts

Fisheries in Madras.

By Christopher Hay, M.A.

The Report of the Madras Fisheries Department for 1924-25 is the first to give an account of a full year's work in all branches of the department's activities, the previous year being in certain respects a period of transition. Three abnormal factors adversely affected the financial results of the year, the failure of the fishing season on the West Coast, the difficulty in working the chank fishery on the East Coast owing to the wholesale migration of the divers to the pearl fishery in Ceylon and cyclones and floods on both coasts. On the other hand, the fish-curing yards, consequent on an enhancement of the issue price of salt and a better system of management, somewhat unexpectedly showed a surplus of Rs. 14,955-13-6 instead of being run at a considerable loss as in previous years. The figures in the report, however, relate to the Fisheries year which commences on the 1st of July and ends on the 30th of June and do not, therefore, include the transactions of the first three months of the official year 1924-25. The Madras Government have recently had under their consideration the question whether the financial results of the working of the yards during the official year 1924-25 justified any reduction in the issue price of salt, but as the results, as pointed out by the Director, showed a net loss of Rs. 6,766, the Government have decided that the question should be postponed for the present.

The Chaliyam fish cannery had no better success than in the previous year. The decrease in sales was no doubt partly due to the dislocation of traffic resulting from floods on the West Coast, but the conclusion to be drawn from the figures of each year since the cannery started operations is that the demand for tinned fish in India is limited and not capable in the near future of any considerable extension and that the chances of creating an overseas market are problematic. If the experiment must be considered a failure it is not on account of any lack of suitable raw material or any technical difficulties in the processes of canning arising out of the nature of the climate, but because the market for the finished product is not wide enough to allow of manufacture on a scale sufficiently large to cover overhead charges. The question of the future of the cannery has been engaging the attention of the Government; in the meantime further manufacture has, we see, been suspended and special efforts are being made to dispose of the stock on hand.

The Tanur experimental station was again handicapped by the absence of the fish shoals

which usually visit the West Coast from September onwards. The quantities of fish cured and of oil, guano and fish-meal manufactured were, therefore, perforce limited and the operations of the year ended in a loss. Owners of private oil and guano factories were equally hard hit by the failure of the fishing season and will continue to suffer losses so long as the fish shoals absent themselves from the coast. A trawler has been purchased and a master-fisherman engaged with a view to deep sea-fishing experiments in general and in particular to an investigation of the problem of locating sardine and mackerel shoals in deep water when they fail to approach the coast.

On the research and experimental side, the most important investigations in progress at the station were those connected with the processes of curing fish. The demand for cured fish and fish-meal for home consumption and for export is so large that further expenditure on equipment for the laboratory and plant for the factory appears to be necessary with a view to more thorough trial of new processes. The Director has been requested to submit proposals. The Madras Government also consider that further steps should be taken to follow up the preliminary inquiries made into the possibility of establishing direct trade relations with merchants in Singapore with a view to exploiting markets in the Far East.

The pearl fishery which was opened in February 1926 and which closed about April last yielded satisfactory results. Another fishery will probably be held early in 1927. The Madras Government are inclined to agree with the Director that legislation is necessary in order to enable the department to exercise adequate control over the operations at all stages; the question will be further examined on receipt of the Director's report regarding the experience gained in the fishery that has just closed. The comparative failure of the chank fishery in the year under review was not unexpected: no satisfactory results can be expected so long as the counter-attraction of a pearl fishery draws the divers away to Ceylon.

The expansion of the Inland Pisciculture section has again been retarded by financial considerations. Schemes for developing existing fish farms and for exploiting new areas have been unavoidably postponed for want of funds. The control of inland fisheries enables the department to increase the available supply of edible fish by the introduction of new varieties superior in quality to the indigenous species and at the same time to improve the condition of the fishermen by leasing fishing rights to them through the medium of special co-operative societies. The Madras Government, therefore, consider that the policy of resuming fisheries on payment of compensation to the local bodies concerned should be continued. The income from individual fisheries fluctuates from year to year according to seasonal conditions but on the average of a series of years may be expected to increase gradually under expert management leaving a margin sufficient to cover the cost of improvements.

Allusion has already been made to the financial results of the management of the Government fish-curing yards. The prosperity of the industry is to a large extent dependent on a plentiful and cheap supply of salt. Salt is issued to curers duty free in the Government yards: the price of issue is, therefore, mainly governed by the cost of transport and the expenses of management. Transport to the yards on the West Coast is comparatively expensive because the salt has to be brought all the way from the East Coast by boat or rail. A scheme is reported to be under the consideration of the Madras Government to utilize the steam trawler mentioned above for towage purposes when not engaged in deep-sea fishing experiments in order to facilitate transport by sea. Proposals have also been sanctioned by the Madras Government since the close of the year for the construction of additional storage accommodation in seven yards with a view to lessen the incidence of wastage. In regard to the question of management, the difficulties of controlling the subordinate staff in yards scattered over the length of the East and West Coasts are obvious. The yards are often located in inaccessible places where the amenities of life are few and the opportunities for oppression are many. Certain tentative steps were taken in the year under review to improve the system of supervision; further proposals for strengthening the inspection staff are under consideration.

The working of the minor sections of the department calls for no special comment. The scheme for the establishment of a biological station on the East Coast in conjunction with the University had to be postponed for want of funds. The Madras Government hope that it will be possible to allot funds for the scheme next year. Little progress in this branch of research has so far been made owing to the inability of the Director to give his personal attention to the work of supervision,

his time being pre-occupied with administrative details.

On the socio-economic side, the Madras Government regret to note that the co-operative movement made no progress and in some respects retrograded. The difficulties of organizing effective co-operative societies for the benefit of fishermen are admittedly great; the poorer classes are for the most part ignorant and improvident and very much in the hands of unscrupulous middlemen and moneylenders whose interest it is to exploit their weaknesses and obstruct any measures devised to ameliorate their condition. Change to them means revolt against established custom and dislocation of their domestic economy. The most promising line of approach to the problem appears to lie through the spread of education among the younger generation. The Madras Government note with satisfaction the increase in the attendance of children at the special schools organized by the department and consider that the results achieved justify the opening of additional schools. For the elder generation, who cannot come under the same influence, it remains to devise a form of co-operation the immediate positive advantages of which are within their capacity to appreciate. Possibly some amount of direct financial assistance may be found necessary; the Director's proposals to grant loans of Rs. 1,500 to two societies are under consideration.

In reading the Report and the Government review thereon, we have been led to a reflection, which we think it well to set down here. Mysore State is blessed with a large number of tanks, some of them of large size. Why not develop the inland fisheries as well as their importance deserves? We hope to see the suggestion taken up

Methods of Earth Road Maintenance.

By Collis Johnson.

General Sales Manager, Stockland Road Machinery Company.

Highway officials in many countries frankly consider the earth road a more or less hopeless proposition. Too often, earth roads are looked upon as something to be graded, dragged, and kept in more or less passable condition with the same treatment that has been used for years, until such times as it is possible to turn them into gravel, macadam, concrete or brick highways.

Engineers familiar with earth road construction and upkeep adhere closely to a few fundamental principles in earth road work which have proved most economical and efficient.

In the first place, proper study of available materials should be made. In many countries six to eight distinct soil types will be found in a mile or so of earth road, varying from heavy vegetable loam to hard rocky clay. These soils do not all demand the same treatment. For instance, deep scarification of heavy rock bearing clay improves the surface but would be unwise for loam.

It is also important that the earth road be properly built if maintenance work is to be economical and effective. After an earth road has been properly constructed with good shoulders, a correctly shaped crown and well-made, back-sloped ditches, the first year's maintenance work may be fairly heavy.

The first year's maintenance can preserve or destroy the construction work that preceded it. It must be carefully and conscientiously done if best results are to be procured. Ditches should always be kept clean, and the soil from ditch cleaning carefully feathered out over the road crown to fill ruts, etc. The whole object of this attention is to secure good compaction of the soil with proper drainage of the road.

After an earth road has become well compacted with correct crown, slope and ditch, the less work done on it the better. It is simply a matter of keeping ditches clean, ruts filled and preserving the crown and shoulders. A common belief is that a lot of earth must be moved in maintenance work. As a matter of fact, the less earth moved the better.

Often well compacted shoulders are given deep cuts and a mound of loose earth piled in the road centre where it forms mud and holds water to soften the subgrade and deep ruts result.

The practice of dragging earth roads while the earth is wet, called puddling, with the idea that such puddling forms a more or less impervious crust, depends upon the type of

road soil. In any case the drag is important as a maintenance tool on earth roads.

Properly used, the drag is efficient and can in some instances make a great deal of grader work unnecessary. Often the mistake is made, however, of dragging the crown of the road first because this part dries first after rain. This moves the earth toward the shoulders which destroys the road's contour. Another disadvantage of the drag is the unevenness of its work. The drag has no "wheel base" and tends to accent the inequalities of the road surface. The drag can never be but a poor substitute for the grader which does the same work much better. Surface maintenance with a light patrol grader is much more efficient. The light horse drawn patrol grader is used primarily to keep ditches cleaned, shoulders built up, and ruts filled. A maxim to the road man is not to move earth until you need it. The maintenance, man's first job, is to preserve the road's section and he should not move or cut down shoulders but should take as light cuts as possible. Cut away earth should be moved when it is needed to fill ruts, low spots and to preserve the crown. If the road is fairly level, the earth can be taken from the ditches and no cuts taken from the road itself. But this should only be done when the ditches need cleaning. Much so called "dressing up" of the earth roads is labour lost for it simply disturbs the surface, makes it wash, promotes absorption of water and does the road no good whatsoever. Grader operators who like to see the smooth, shining surface of moist soil behind the grader blade and think this is making an earth road as smooth as concrete have only to wait until the next rain to see what their work has accomplished.

Steep hills with badly washed fills in hollows and gullies at the road side often have deposits of gravel within a few hundred feet. This material should be used for gravel surfaces on hilly roads to prevent stalling of motor cars and make travel possible when roads are muddy. A few teams and wagons are all the equipment needed.

But above all the road man should remember that the well built road is, after all, the best foundation for economical maintenance.

Bread-Earning Problem II.

By Jamshed N. R. Mehta.

President, Karachi Municipality.

The first necessity was understanding what was true Patriotism. One who felt for his country and was preferred to further the interest of the masses was in the true sense a Patriot. In civilized worlds, such a man, if he had money to invest and possessed wealth, he adopts practical methods. He sends out his estate agents to find out large area of land, suitable for agriculture. He gets reports from such estate agents and he employs agriculture experts to make further reports On their advice, he buys a large area of land and then employs some agriculturists for a year or two to develop the land. He builds cottages, clears up the land, divides it into small holdings and then offers it to families on easy terms. They get implements, seeds and free advice or lessons. All that they have to do is to work. The wealthy patriot does not think of housing his money or earn 9 or 12 or 18 per cent interest. He is satisfied with his bank interest of 4 to 5 per cent ; he also receives back his capital by instalments and thus families are settled as small holders. Similar work is being done by syndicates of business men and investors. Now it is necessary to instil this spirit in the people. In all communities there are wealthy men. Even if they can understand what true patriotism is towards their community men much can be done this way. They can buy land, develop, give full illustrated reports to people, giving out facts about climate, advantages and suitability of the land, advertise and induce their friends, relations, community people or countrymen to emigrate to such places. Thus one can build up modern villages, colonies and settlements.

Opportunity at the Door.

The lecturer then pointed out how such colonies and settlements have been established in Africa, Canada, Australia and America, and how the people have here settled happily. He gave certain figures to prove that the amount of agriculture produce per head was 3 to 5 times more than in India, and that this was due to the use of mechanical implements and adoption of scientific methods. He then

pointed out the results of new developments in the Punjab and urged that now the opportunity was at hand, as in near future within 4 or 5 years, large areas could be available in Sind by the Barrage scheme, work should be started without delay. People must begin to think and make plans. They must urge wealthy men of the province, of their community and of the country to be truly patriotic in the ways as adopted in other countries. There were many charitable persons who spent money, large and fabulous amounts on feeding Brahmins, marriage festivals, death ceremonies and building memorials. It was necessary to direct their attention to this noble work, and continued efforts should be made to seek their co-operation.

A Changed Mentality Necessary.

Our own mentality needed to be changed. We must from now resolve to get out of cities, and settle our plans. We could try and find out what families could and would go with us. What persons would amicably and harmoniously work with us. Our main idea is to establish villages. 20, 30 or 50 families could combine for such projects. Elders should begin to instal such spirit in the families from now. Everyone should begin to study and read all about agriculture. Facilities should be provided for a few boys of each community or families to be sent to Poonar, Pusa or other agricultural colleges, schools and experimental farms, so that they may be ready to help by the time land is available on the new canals. Another necessary change in our mentality is to educate our children that labour by one's own hands is the real way to service. The lecturer felt that the failure of our agriculturist landlords was due to this. They and their sons would not work. They would hardly be on the fields for few days in a year. It was proved in the Punjab that wherever people worked on their land, they became happy and prosperous. The lecturer gave figures of various parts how in one part of the Punjab where there were large landowners who were absentee landlords, in constant debt and how in other parts where small holders worked with their own hands were prosperous.

Co-operative Societies.

The lecturer then pointed out that for people generally this would be necessary. In ancient times, such a society was not necessary because people in villages lived by convention on such lines of co-operation. Their mentality was such. But owing to our present ways and needs, registered Co-operative Societies were necessary. By such methods, investors could be more easily drawn to co-operate with a link of co-operative societies, properly managed village banks could be established. The charm of village banks, district banks and a central bank could bring in large capitals for safe investment on low interest which could be safely advanced to members of Co-operative Societies. In the Punjab there were such 9000 village banks. Through such societies, seeds and manure could be purchased and sold in large quantities. Implements could be brought, stocked and sold. Produce could be sold. I look forward to a day when there would be Co-operative ginning factories, mills, factories, and even Co-operative Export Companies.

Emphasizing in a recent speech the possibilities of export trade between the United Kingdom and India, Mr. A. M. Samuel, M.P., parliamentary secretary to the Overseas Trade Department of the British Government, said it might surprise people, in the north of England, where the iron and steel and engineering trades were of such paramount importance, to know that India, which, of course, was mainly an agricultural country, owned and used as many as 20,000,000 wooden ploughs. What reason was there to suppose that India could not absorb 3,000,000 iron ploughs annually? Explaining that exact figures were not available at present, Mr. Samuel went on to say that a few years ago there were in India 2,500,000 of water wells. Millions of cattle and bullocks are used there for water-lifting and for cane sugar crushing and other mills. In his view this was a wasteful method of obtaining power for agricultural work. Why should not Britain try to sell to India 500,000 pump-engines for water-lifting and 150,000 engines for working the mills? Mr. Samuel overlooks the fact that agricultural operations are often conducted in India many miles from the railway track and far from any engineering centre whence "spares" can be procured and where repairs can be accomplished. The Indian agriculturist can repair his wooden plough if it breaks. But if anything went wrong with his hypothetical iron plough he would be helpless, remarks *Commerce*. Pump-engines for water-lifting are, by the same token, impossible except in exceptional cases.

Industries in Baroda State, 1924-25.

By G. V. Rajaratnam.

The Annual Report of the Department of Commerce and Industry of the Baroda State for the year ending 31st July 1925 is a record of useful work done during the year. The Empire Exhibition in which the Baroda State participated, was a splendid success as almost all the exhibits were sold and this goes to prove the popularity of such of the home industries as Sunkheda lacquer, wood carvings, etc., in England. The world-wide slump in trade, not unnaturally affected Baroda also. Such State industries as cotton mills and cement factory were badly shaken by the depression. The Billimora and the Dwaraka cement factory cannot, the report says, hold their own, unless the State or some enterprising merchant offers protection. A relieving future is the stability of the old established firms, who have declared dividends ranging from 4½% to 25% in spite of bad trade. The Kalol Mills, Dadabhai Mills and the Billimora Mills have to commence work still as money is short to instal complete machinery. The Darbhanga Mills went into liquidation. Encouraging and solid progress has been made in Textile Mills as the following will show:-

For 1920—21	4 mills	Capital 32 lakhs	Looms & Spindles 722 & 53,126
1924—25	13 mills	189 lakhs 600% increase	2096 & 1,84,878
For 1920—21	Yarn 33 lakhs of lbs.	Production of cloth 22 lakhs of lbs.	Wage earners 2,300
1924—25	130 lakhs of lbs.	56 lakhs of lbs.	6,500

The Alembic Chemical Works is doing yeoman work. It is very unfortunate to observe the passing away of the Modern Chemical Works and it is hoped that some one will salvage it, by improving the organization and efficiency. The Dwaraka Cement Factory produced 13,570 tons of cement in 1924, paying a royalty of Rs. 2,544—6—2. Lack of capital and the depressed condition of the market had hastened its closure. But the new development of Beyt Harbour make it imperative that the said Industry should be revived. Negotiations are in progress over the 'Ransipur China Clay'; the previous lease being cancelled.

New Industries.

Unfavourable conditions in trade did not foster new large industrial concerns, yet it was not devoid of new enterprizes. Three ginning factories in the Dehegam Taluka, one ginning factory at Kosamba, three cotton presses—one at Dehegam and other at Maroli and the third at Kadinar, two Cattle Breeding Associations, one at Baroda and the other at Naosari, and one grinding and saw mill at Baroda were promoted.

River and Sea Transport Facilities.

With the rush of traffic on railways or where Railway facilities are not available, people always resort to cheap river transport. The river transportation has become economical and easy with the invention of internal combustion engine. The Government at one time started a steam launch service but it was not paying. To-day half a dozen flat-bottom country crafts propelled by small oil engines ply between Broach and Tilakwada.

An up-to-date pier for berthing big steamer at Adatra has been completed for the present to develop Bay and Harbour.

Dairy and other Subsidiary Industries.

Baroda being essentially an agricultural country, the need for promoting dairy, cattle breeding, horse breeding, etc., has engaged the attention of the Government. The Palace Dairy Farm is rather a good start to begin with.

Banking Facilities.

The Bank of Baroda started with the modest capital of 20 lakhs. Its prosperity and the general public's confidence in it is very gratifying. In the year 1924 it made a net profit of Rs. 6,00,152, with a reserve of Rs. 20,75,000. The Savings Bank and Current Account Deposits amounted to Rs. 1,68,84,396 and its Fixed Deposits came up to Rs. 2,18,30,481.

Match Industry.

The Baroda forest woods were found suitable for making veneer and splints for matches with the result, that one party has already started a match factory. Another application is being considered.

Fish Canning at Velan.

The fish canning industry could not be brought to the point of fruition owing to the

paucity and difficulty of establishing permanent fishermen at Velan. If this is overcome, there is a possibility of its becoming a thriving industry.

Gold and Silver Thread Industry.

With a view to stimulate the ancient home industry of making gold and silver thread, efforts were made this year to induce some capitalist to start the same industry. A Surat merchant has come forward to start one.

In reading through the report, one is impressed with the fact that it is the evident anxiety of the Government of Baroda to improve all the industries possible under the conditions of the State. Improvement of industries and their prosperity means prosperity of the State and its people. The Cotton Mills are predominant in the State and the coming of better times will certainly be of good cheer to those at present much-languishing industry.

Notes on Co-operation.

By the Editor.

Re-investment of Capital.

Now-a-days, the British distributive societies are in possession of very considerable capital which they utilize in diverse ways. It would seem, however, that with their increasing capital, the distributive societies have become more and more inclined to re-invest it outside the co-operative movement. It is a striking fact that £33,000,000 or more than two-thirds of the total capital amassed by the societies during the last ten years, has been placed in external investments. A part of this capital has been invested in enterprizes of great importance for the British Empire and the sense of public duty which animates these societies and which has shown itself in the services rendered by the societies to the municipalities in regard to housing problems, transport and lighting questions, has led the distributive societies to place a large part of their capital at the disposal of the municipal authorities

In Germany.

In Germany, also, close relations exist between the municipalities and the co-operative movement. The German municipalities are lately greatly desirous of acquiring membership of regional and local distributive societies, thus to benefit when making purchases on behalf of their welfare and health institutions. Already upwards of 70 municipal authorities have become members of local distributive societies.

Compulsory Delegate Meetings

According to the 1922 Act, all co-operative societies with a membership of 10,000 or more must substitute a delegate meeting for the general meeting, a step which was left open to societies with 3,000 or more members. The Act, however, proving insufficient, four important German co-operative unions, together with the Federal Ministry of Justice, recommended the introduction of a delegate meeting compulsory for societies of 3,000 members, and optional for those with a membership of 1,500. The proposal was discussed and adopted by the Reichstag on 12th January 1926, and the amendment of the Act is now in force.

Co-ordination of Movement in India.

The Indian Co-operative movement has grown with the assistance and under the supervision of the Government's officials, but on self-help lines. It has grown in size, since 1904, when the first Co-operative Societies Act received the Viceregal sanction, and the figures for 1923-24 were 61,106 societies with 2,313,567 members. It has grown also in perfection of detailed organization, and at the beginning of the present year it made a decisive step towards the creation of a central body to co-ordinate all the co-operative activities in the various provinces. On the occasion of the 9th All India Registrars' Conference and the All-India Provincial Banks' Conference, many leading co-operators and co-operative registrars and provincial federated bodies met in Bombay on 16th January 1926 to focus the diffused thought in the co-operative field and nationalize the advance of co-operative thought and action in different provinces of India. For this purpose, they have proposed certain measures, some of the most important ones of which are :—

(1) to convene every year an All-India Co-operative Congress ;

(2) to collect an All-India Central Co-operative Reference Library for Research ;

(3) to manufacture slides, films, charts, diagrams of co-operative interest ;

(4) to conduct an All-India Co-operative School or College ;

(5) to publish a magazine of All-India character ;

(6) to hold exhibitions of Indian co-operative products at different centres ;

(7) to arrange co-operative tours in different parts of India ; and.

(8) to collect funds that is necessary for this purpose.

The need for an organic connection between the provincial co-operative bodies has been felt more particularly by the co-operative banks for their financial transactions. The first step towards financial inter-relations was accomplished on a provincial basis by the creation of provincial co-operative banks, which numbered 7 in 1918-19 and 8 in 1923-24. And further progress in this direction was contemplated during the first session of the All-India Provincial Banks' Co-operative Conference held in Bombay on 15th and 16th January last. The Conference has recommended the appointment of a standing committee consisting of one representative from each Provincial Bank of British India and Indian States to convene conferences in future and to take such other measures to promote closer relations between the Provincial Banks.

Economics in the West.

European Currency Debutantes, 1922-26.

London, July 1st. 1926.—Those fortunate enough to have observed some of the more important economic changes brought about by the war will give a, by no means, lowly position, in order of importance, to a pair of closely related metamorphoses in currency practice and management. The first change is well exemplified in the currency system of this country and consists in the substitution of notes for gold coin in public circulation. In some countries this development has been aided by statute, while in others it has followed as a direct result of heavy depreciation of paper currency issues. But in whatever way accomplished, it represents a distinct economy, not only in the saving of costs of wear and tear, but in the greater efficiency of centralized as opposed to scattered gold reserves. A celebrated banker and statesman of last century was impressed with the value of a gold reserve in the pockets of the people, but it is generally recognized that such a reserve is thrice costly ; like all reserves it earns nothing ; unlike most, it wears itself away ; and finally, it is by no means efficient. It has to be collected before it can fully perform its reserve functions.

The second change is perhaps even more important. Whereas before the war it was the custom for most central banks, and in many countries for various other banks as well, to hold substantial gold reserves and to scramble for additions thereto, the point has now been reached where not only are the internationally acceptable reserves of most countries consolidated in the hands of the respective central banks, but several of the latter, especially in the smaller countries, have to a large extent substituted stable foreign exchange values for gold as the ultimate reserve against currency and banking liabilities. The reserves may then take the form in part of notes, drafts or deposits issued by, drawn on or held in first-class foreign banks in countries enjoying stability of currency in terms of gold, or preferably in countries on a full gold standard. The essential quality of such assets is that they should be realizable without question on demand It is possible that they may earn interest for the bank which owns them—a thing no gold reserve ever did. But in addition they represent great economies in the use of the world's gold supply, and it was with this advantage in mind that the Financial Commission of the Genoa Conference recommended the utilization of foreign exchange as backing for central bank note issues.

These two changes together constitute a double economy in the use of gold. But the second is perhaps of greater significance, and it is proposed to illustrate it by reference to some of the new currency units introduced in various countries as the outcome of war and post-war waves of inflation. In none of these countries does gold coin yet circulate freely.

In a trip of some 1,500 miles in Europe—roughly only half as far as from cost to cost of the United States—one could meet nine or ten entirely separate units of currency, all introduced since the war. The Treaty of Versailles and its associates carved out various

new countries and dismembered others, and as a result European units of money are considerably more multifarious than in 1911. No longer do we enjoy the sweet simplicity, speaking comparatively, of sterling, the Latin and Scandinavian Monetary Unions, crowns, marks and roubles. Each has gone its separate way. Some, notably sterling and the Swedish krone, have like the Prodigal returned to the pre-war parity and received paternal welcome and brotherly reconciliation. The German mark has been reinstated, phœnix-fashion. The Latin Union has broken up, in fact if not in theory. The Danish and Norwegian kroner have still to join the Swedish member of the party. But in other countries the pre-war units have been for ever cast away and new ones installed to take their places. Now we have schillinge, pengo, zlote, lats, litai, kroons, chervontzi, jostling with the veterans in the world's great currency game. These various units are worthy of brief separate consideration.

Central Europe.

The old dual Empire of Austria-Hungary has now become three separate countries, AUSTRIA, Hungary and Czecho-Slovakia, besides contributing to the formation of Jugo Slavia and the new Roumania. The first of these, with international aid rendered through the League of Nations, after grievous vicissitudes, has reached currency stability on a new unit, the schilling. Prior to the introduction of the schilling, however, a new bank of issue had been set up as part of the mechanism for reorganizing the existing monetary system. The National Bank of Austria began business, with exclusive right of note issue, in January 1923. The notes are legal tender but are not yet redeemable in gold, though there are no restrictions on gold movements into or out of the country. For the first five years of its existence the Bank must hold a cash reserve of at least 20 per cent against the total note circulation less the fiduciary issue against the Federal loan debt plus its demand liabilities. For the second quinquennium the minimum ratio is raised to 24 per cent, for the third to 28 per cent, and thereafter (until cash payments are resumed) to 33⅓ per cent. A graduated tax is leviable on any excess of note and demand liabilities less Federal loan debt over the amount permitted by the cash reserve. Cash may include gold, foreign bank notes in stable currencies, stable foreign currency bills on unquestionably solvent banks, and demand deposits in similar banks in leading financial centres. Of the last item at least 25 million gold kronen (about 36 million schillinge) must be held until the resumption of cash payments. The remainder of the cover for the notes and demand liabilities is provided by bills and, for five years only from the establishment of the Bank, by secured advances, foreign exchange not eligible as cash, and Austrian token coin.

In December 1924 began the supersession of the old unit by the schilling, which was made equivalent to 10,000 paper kronen. On the basis of gold content 34.5851 schillinge are equivalent to £1. Schilling notes of the National Bank are now in circulation, though no gold coins have yet been issued. Here then is one entirely new unit, on a hitherto unknown arithmetic basis.

In HUNGARY the developments have been similar, though somewhat later than in Austria. Here again financial regeneration was secured with the assistance of the League of Nations. A new bank of issue, the National Bank of Hungary, was set up and began business in June 1924. It is essentially a banker's bank, though the Government hold a substantial proportion of the capital. It has a monopoly of note issue, and minimum cash reserves of the same percentage and substantially the same kind as in the case of the Austrian National Bank must be held against notes and demand liabilities. If, however, the reserves should fall below the minimum for the time being in force the Bank must pay a graduated tax on the excess liabilities. In the Hungarian case too foreign demand deposits of at least 25 million gold korona (equivalent to nearly 29 million pengo), must be held until cash payments are resumed.

At the beginning of this year a new currency unit, the pengo, was introduced, as the equivalent of 12,500 paper korona. On the basis of gold content 27.82 pengo = £1. The use of the new unit is voluntary until January 1, 1927, when it becomes the sole legal tender. The budget is now drawn up in pengo, as are the returns of the National Bank. Other banks are now converting their accounts to the new currency. Korona notes are still in circulation, but arrangements are being made to stamp the larger denominations with their pengo value, while it is understood that notes in the new denomination will shortly be issued. No gold coin is yet in circulation, but there are no restrictions on the import and export of gold. Up to the present both the schilling and the pengo have been maintained at or about parity with gold standard currencies and the new units are firmly entrenched in

the economic life of their respective countries.

The course of events in CZECHO-SLOVAKIA, the third portion of the old Austro-Hungarian Empire, has been markedly different. Early this year the National Bank of Czecho-Slovakia started business, taking over the assets and liabilities and functions of the Banking Office of the Ministry of Finance. The bank has a monopoly of note issue, and the notes are legal tender. Against the note issue, less the Government debt arising from the State note issue, plus other obligations payable at sight, must be held a cash reserve of 20 per cent, rising for fifteen years by an additional 1 per cent each year. A graduated tax on the excess liabilities is payable in the event of the reserve falling below the prescribed minima. Cash for this purpose comprises precious metals, of which at least three-quarters must be gold, foreign legal tender coins and bank notes, and drafts or short-term claims on sound banking concerns in the principal financial centres of Europe or America. Foreign bank notes, coins and bills for cash reserve calculations may not exceed the amount of the metallic reserve.

Up to the present no monetary unit with a new designation has been introduced. In effect, however, the Czech krone is a new unit, for although the pre-war mint par has not been legally abolished, the National Bank is required to maintain the rate of exchange between the limits of $2.90 to $3.03 to 100 kronen. Thus the working parity with sterling is roughly 161 to 168. Should a full gold standard be restored it would obviously be necessary to regularize the situation by substituting a new gold parity for that now in effect abandoned.

Eastern Europe.

We may now pass to the closely related but autonomous political entities, POLAND and the Free City of Danzig, the former of which was before the war mainly a part of Russia, while the latter was included in the Kingdom of Prussia. Poland was one of the first to introduce a new currency unit, and did so entirely without concerted international aid. From January 1, 1924, all payments to the Government were ordered to be made in terms of the zloty, equivalent to a gold franc. Shortly afterwards the new currency was adopted as the unit for general purposes, and was taken as the equivalent of 1,800,000 Polish marks, the latter continuing as legal tender until the middle of 1924. With the introduction of the new unit the Bank of Poland was set up, and began business in the following April. The Bank has a monopoly of bank note issue, and the notes are full legal tender. In principle they are redeemable in gold, but this quality was suspended from the outset. Furthermore, exports of gold are permitted only under licence, except in the case of limited amounts of articles for personal use, and gold recently imported. As cover for the notes must be held not less than 30 per cent of gold and net balances and bills in stable foreign currencies. There is a special tax on the note issue, graduated inversely according to the extent of the gold and gold exchange cover.

The zloty was maintained at about parity until July 1925, when depreciation set in, and at the present time it is worth about half its par value. The note issue of the Bank is actually lower than a year ago, owing to strict limitation of advances to the State. The Government has itself issued notes, however, so that at the present time Treasury and Bank notes circulate side by side and the ultimate fate of the zloty is uncertain.

The monetary stability enjoyed by DANZIG is due in part again to the efforts of the League of Nations. The Danzig gulden was introduced in October 1923 and is the sole legal tender. Its value is fixed at one-twenty-fifth of the pound sterling and it is maintained at par by the law that the Bank of Danzig must give sterling cheques on the Bank of England in exchange for 1,000 gulden or more in coin or notes, when offered at not less than 19*s.* 10*d.* to 25 gulden, *i.e.*, 25.21 gulden to the £, and must deliver gulden cheques for sterling paid in London for not less than 1,000 gulden, when offered at a rate not below £1 0*s.* 1*d.* to 25 gulden *i.e.*, 24.90 gulden to the £. Thus, despite the absence of restrictions on gold movements into or out of the City, Danzig is on a true gold exchange standard.

Like various other new central banks, the Bank of Danzig, founded in February 1924, is the successor of a transitory institution which issued provisional notes pending stabilization of financial and monetary conditions. It may issue notes up to 100 gulden per head of the population backed as to at least one-third by gold coin and notes of or demand balances with the Bank of England. The remainder may be in bills at not more than three months on actual goods sold or, within strict limits, in Danzig token coin. Any issue over 100 gulden per head must be backed cent per cent

by gold and/or Bank of England notes and balances, and a tax must be paid on the excess issue.

It is quite possible that at some time a union may be effected between the currencies of the two neighbours, Danzig and Poland. Under a convention concluded in 1920, the two parties "undertake, as soon as circumstances allow, on application by either party, to enter into negotiations for a uniform monetary system. A period of one year must elapse before this unification becomes operative after it has been resolved." Clearly, however, this is not likely to be an immediate development, for, apart from the tentativeness of the agreement, the gulden has remained stable while its neighbour the zloty, has become seriously depreciated, and ultimate stability cannot yet be said to have been achieved in the case of the latter currency.

Crossing the border of Poland into its late absorbent, RUSSIA, the situation here again is found to be in a state of flux. The State Bank of the Union of Soviet Socialist Republics, as it is now called, was founded in November 1921, and in the following year was accorded the right to issue notes in terms of gold. A new unit was adopted, the chervonetz, equivalent to 10 gold roubles or £1 1*s.* 1¾*d.* in sterling. The founders of the State Bank did the memory of Sir Robert Peel the rare compliment of dividing it, like the Bank of England, into two sections, the Issue Department being concerned solely with the function of providing the chervonetz Bank note circulation. The notes are legal tender and must be backed to at least 25 per cent by gold, platinum and stable foreign currencies, and for the rest by first-class short-term commercial bills.

The new Bank notes were first issued towards the end of 1922, at a time when the Soviet rouble was steadily depreciating. In March 1924, however, the latter currency was abandoned and the issue of Treasury notes, issued in roubles as subsidiary to the chervonetz, was begun. The Bank notes are not redeemable in gold, and there are strict limits on the amount of metal which may be exported. Consequently Russia is by no means on a full gold standard.

Baltic States.

A more definitive stage has been reached in at least two of the four Baltic countries now entirely separate from Russia. In these four countries, containing an aggregate population of less than ten millions, there are no less than four distinct currency units, with no simple arithmetic relationship between any two of them. One interesting fact about these countries, however, is that each has proceeded along the road of financial regeneration unaided by any concerted international efforts. That the progress from chaos to order has been so marked and so steady is a matter for congratulation, particularly when it is remembered that in each country almost completely new political machinery has required to be set up at some time or other during the past ten years.

In FINLAND, the largest of the four countries, the local currency has been stable in terms of gold, at a depreciated level compared with the pre-war parity, ever since the autumn of 1922. When the gold standard was restored, therefore, as from January 1, 1926, though the name "finmark" was retained, the new rate was given official and permanent sanction, gold parity being established at 193.2296 to the pound sterling. Gold in quantities of not less than 40 grammes (about 1,055 finmarks) may be presented for minting at a charge of ⅓ per cent, and imports and exports of the metal are entirely unrestricted.

The Bank of Finland, which was in pre-war days and still is, the country's central banking institution, is the sole source of note issue. Under the latest regulations the note issue and other demand liabilities may not exceed by more than 1,200 million finmarks the gold reserve plus credit balances with foreign correspondents. The rest must be covered by foreign bonds, coupons and bank notes in foreign currency, and foreign and inland bills based on actual merchandise and with not more than three months to run. The gold reserve itself must be maintained at not less than 300 million finmarks. The Bank notes are full legal tender and are redeemable on demand in Finnish gold coin, of which none is yet in circulation, bullion, or cheques in foreign currency payable at sight, at current rate of exchange, which may not exceed parity by more than one per cent. The choice between these lies with the Bank. Consequently Finland is on an almost, if not quite complete, gold standard.

LATVIA, for the sake of convenience, introduced the gold franc as the legal unit of account in June 1921. Latvian roubles, however, constituted the circulating medium, and became stabilized at 50 to the gold franc. In the middle of 1922 the lat, equivalent to the gold franc and to 50 Latvian roubles, was adopted as the currency unit. Although

Treasury notes are in circulation, the Bank of Latvia, founded towards the end of 1922, issues notes which are full legal tender. Up to 100 million lats they must be covered to at least 50 per cent by gold or reliable and stable foreign currencies; over 100 millions and up to 150 millions to at least 75 per cent; and over 150 millions to 100 per cent. The remainder of the cover must be in short-term bills. Most of the Bank's gold reserve is on deposit at the Bank of England, but the notes are redeemable on demand in gold or foreign currency. Here again, however, while there are no restrictions on gold movements, the medium of redemption is at the option of the Bank.

The situation in LITHUANIA is somewhat different. In October 1922 a new unit of currency, the litas, with a par value of one-tenth of a United States dollar, was introduced. At the same time the Bank of Lithuania was founded, with a monopoly of note issue. The notes must be covered to at least one-third by gold or its equivalent in stable foreign currencies, and for the remainder by easily realizable securities. Bank notes and token coins alone constitute the circulating medium, and while the notes are unlimited legal tender they are not yet redeemable in gold. Consequently a gold exchange standard, as opposed to a gold standard, is in operation.

The process of regularization has not been carried so far in ESTONIA. The Bank of Estonia, founded early in 1919, first issued notes two years later, when a legal limit was placed on the circulation of State notes. The Bank's notes, though not legal tender, are convertible into State notes on demand. Against the circulation must be held not less than 10 per cent of State notes and not less than 50 per cent of domestic secured loans, discounts and advances. For the remainder the backing may consist of net balances of foreign exchange, gold, silver and platinum, and other assets including Government securities. The legal maximum Bank note issue is 2,500 million Estonian marks.

In June 1924 the kroon, equivalent to one Swedish krona, was introduced as the unit of account and the exchange was stabilized shortly afterwards at 100 marks to the kroon. It is now proposed that the gold estmark shall be established as the new currency unit, being equal to a Swedish krona and the parity therefore being 18.159 to the pound sterling. Under the reorganization proposals the Bank will have a monopoly of bank note issue and the issues of State and Bank notes will be amalgamated. The Bank will be required for the first five years to keep a 25 per cent reserve of gold and foreign exchange against its circulation, the figure to be raised thereafter to thirty per cent. Two-thirds of this reserve must consist of gold coin or bullion at home or deposited abroad. The note issue in excess of the cash reserves, which must be backed by commercial bills and other securities payable on demand, and on which a commission must be paid to the Government, must not exceed $27\frac{1}{2}$ million gold estmarks. It also appears that Estonia will, as part of the scheme, introduce a full gold standard, the Bank being obliged to buy or sell gold at a commission not exceeding one per cent. Although the Estonian plan has not yet been put into operation, exchange stability seems definitely to have been attained and well secured in all four of the ex-Russian Baltic States.

Foreign Exchange as Cash Reserves.

An infinity of interesting comparisons could be made from a detailed study of the constitutions and regulations outlined. The various protective measures against inflation, by limitation of note issue, reserve requirements, and restriction or prohibition of advances to the state for example, would give material for a most instructive study and provide a useful basis for the recording of recent and future history. But from the particulars here given perhaps the most striking feature is the wide utilization of foreign exchange in terms of stable foreign currencies as cash reserve against note and other liabilities. This tendency opens up three distinct channels of thought. In the first place it is pertinent to ask: Will not the substitution for gold of foreign notes, bills, securities and balances lessen the responsiveness of price levels as between different countries? On a full gold standard, with each country holding its own gold reserve, a rise in prices in country Upland compared with prices in Downland will automatically turn the exchanges against the former. Gold will tend to flow out, and to protect the reserves interest rates will be raised and credit contracted; at the same time gold will flow into Downland and promote an immediate expansion of credit and a rise in prices; the two influences together will bring about a speedy readjustment of the balance between the price levels. Now consider a rise in prices in Upland when that country holds a large amount of foreign exchange in its reserve in place of gold. The exchange will turn against that

country, and its stock of foreign exchange will dwindle. This may be almost as effective as an outflow of gold in prompting a rise in interest rates in Upland and a consequent contraction of credit. But seeing that sales of reserve exchange merely constitute a transfer from Upland to Downland ownership of balances already existing in Downland, they will in no way induce an expansion of credit and a rise in prices in the latter, as gold most probably would. Consequently readjustment will be effected from one side only and is not likely to be accomplished so speedily as when gold moves freely from place to place.

The second point may be more briefly stated. The tendency to reduce gold stocks, substituting exchange for metal, to a large extent nullifies the old basis of exchange rate limitation. Before the war, and in some cases now, exchange rates could not fluctuate beyond the gold points, set by the cost, in freight commission, insurance and loss of interest, of moving gold. If sales and purchases of exchange now take the place of gold export and import to a predominant extent in the case of some countries, the old gold points are no longer fully operative. They will tend to narrow towards parity, *plus* or *minus* bank charges for transmissions and sales of exchange. On this account, therefore, exchange fluctuations may in some cases be less marked in future than before the war.

Thirdly, the widespread use of exchange cover may tend to curtail future demands on the world's output of gold. It is true that ultimately gold must be held somewhere but the stable currency central bank will most probably not hold 100 per cent of gold against the claims held as cash reserve in the other central banks. Under these conditions the world's gold stocks form the basis for a larger volume of credit than might be the case if each central bank held its own reserve entirely in metallic form. Thus an economy in central bank gold stocks is secured, and all other factors apart—and there are several perhaps more potent ones—this one at least is towards a reduction in the demand for gold and therefore a rise in the general level of prices.

Economic Notes from London.

International Institute of Agriculture.

London, July 1st. 1926.– The permanent Committee of the International Institute of Agriculture held the closing Meeting of the Session (1925–26), under the presidency of H. E. De Michelis and will not meet again until October next. The President of the Institute presented a proposal for an International Conference to be held in Rome for the protection of animal useful to farmers. The Permanent Committee decided to prepare a vast collection of technical, legislative and administrative documents in order to establish a plan of general protection of all animals useful to farmers to the advantage of all States, and on this basis to draw an international convention to be examined by a special Conference. It was decided to take part, together with the Secretariat of the League of Nations, in the preparatory work dealing with the economic agricultural questions of the World Economic Conference.

The Committee expressed interest in the communication made by the Vice President of the Institute, M. Louis-Dop, regarding the results of the International Congress on Milk held in Paris. Due note was taken of the decision of the Congress and it was decided to carry out a fuller enquiry, at the Institute, into the questions having reference to the milk industry and to prepare a complete programme for the development of systematic work of an international character.

The Permanent Committee examined and approved the regulations of the next Congress of Olive Growing and appointed the Honorary Committee and the Technical-Scientific Committee. H. M. the King of Italy has graciously accepted the High Patronage. Honorary President: H. E. Benito Mussolini, Prime Minister of the Kingdom of Italy; Honorary Vice-Presidents: S. E. Belluzzo, Minister of National Economy and H. E. Peglion, Under-Secretary of State for Agriculture.

As regards the International Wheat Experts' Conference, suggested by H. E. Mussolini, the Committee decided to consult the best experts of each country on an approved set of questions. According to the replies that will be received, the date of convocation of this important Conference will be decided. Good progress is being made with the work of preparation for this Conference and a special

monograph is being compiled and will be of special interest.

Lastly, the Permanent Committee decided that the Technical-Scientific Commission on Agricultural Credit shall meet at the beginning of July next.

International Housing and Town Planning Congress.

The next International Congress will be held in Vienna from September 14th to 19th, 1926, in accordance with the decisions taken at the Amsterdam (1924) and New York (1925) Congresses, and in response to the invitations of the Mayor and City Council of Vienna, supported by the Austrian Government and the Austrian housing and town planning organizations. The principal subjects for discussion will be :

(*a*) Examination of the conditions of land tenure in each country and of how far they permit practical results respecting town and regional planning.

(*b*) The rational distribution of cottage and tenement houses.

Under the first heading will be discussed land ownership and leases and the uses to which land may be dedicated in town and regional plans, the acquisition of land (whether by private treaty or compulsory powers) where necessary for the plan, the exchange of sites, and all the land problems that it is necessary to solve so that the plans as drawn up may be actually achieved. It also involves the study of regional and town planning in relation to existing and potential land values, a study which is made the more necessary by the recent growth of regional planning and the larger areas that are now envisaged.

The second subject will provide for comparisons between the two types of housing development, their appropriateness under varying conditions, their respective costs, and their social advantages and disadvantages. It also involves consideration of the place in regional and town plans of both types of building and the relation of housing to town and regional planning.

The provisional programme, copies of which may be obtained from the Organizing Secretary, International Federation for Town and Country Planning and Garden Cities, 3, Gray's Inn Place, W.C., shows that a number of well-known experts from various countries have promised to present papers.

Vienna is itself of much interest from the point of view of town planning and housing. It is the centre of an important region and has the status not only of a city but of a state of the Austrian Republic. The city has had a zoning plan since 1893 and a general plan since 1894. It has its large belt of forest and meadow amounting in all to 11,000 acres. A new town planning scheme is being prepared for the large town area on the left bank of the Danube.

There will be a specially selected International Exhibition dealing with the congress subjects. There will also be an exhibition illustrating the development of Vienna from earlier times and suggestions with regard to its future, also some characteristic Austrian house and town plans.

Functions of Advertisement.

Comparatively few persons, apart from those whose business it is to sell goods by advertising, understand the functions of advertising. How little the average man understands the importance of the psychological aspects of publicity, quite apart from the practical economic questions involved, is shown by the readiness with which the uninitiated will undertake to draw up advertisements without skilled assistance. They do not know enough to realize the nature of the questions involved, and would be surprised to learn that the first essential is the formulation of a definite policy. There must be no uncertainty whatever as to the object it is sought to attain. Not until that has been decided should there be any discussion as to the practical means to attain the ends in view. The failure of many inexperienced advertisers is due to the obsession that "ideas" are all that matter. Having got what they believe to be a "bright idea", they proceed to give it publicity, without considering what may be the effect. In reality every part of an advertising campaign should be designed to contribute to the achievement of the final object in view, whatever it may be. The advertiser must decide not only what his claim is to be, but what is to be the basis on which it is to rest. Is it value for money, supreme quality, novelty, or the dictate of fashion ? Why should the prospective customer buy his goods in preference to those of others ? If the advertiser cannot give any reason he had better postpone his advertising until he can.

Advertising is not a trick : it is merely salesmanship in print. It may be good policy to create a favourable atmosphere before "making the offer", and there are many ways of keeping it fresh and attractive ; but sooner or later the advertiser and the salesman must

offer the goods, and acceptance or rejection largely turn on the impression that has been created of the advisability of a transaction. The first is usually a trial order, but the advertiser does not expect to make his profit on single orders; for that he relies upon repeat orders placed because the first transaction has proved satisfactory. That is where quality and service count. To advertise before you have price and quality right, or before you have arranged for efficient distribution, is expensive futility. Remember that your competitor will read your announcements and will not meekly submit to the loss of his trade. He must be watched; in other words, you must attend to your business. Advertising will not take the place of assiduity; it is a first-class accelerator, but it is not an automatic self-starting fortune-making machine.

Australian Tariff.

The changes in the Australian tariff which have just come into force have been frequently discussed in our columns, and it is not necessary now to do more than remind readers of the alterations. They are not, of course, all in one direction. Greater protection for certain Australian industries has to be set against an increase in the preference accorded to such British products as motor chassis and cinema films. It is claimed that on the whole British industry will reap a substantial benefit, and it is to be hoped that the progress of trade will justify this expectation. Meanwhile, the date of the Imperial Conference draws near, and it is unfortunate that the British Government will not have more to show as the fruits of the Economic Conference of 1923.

Imperial Conference

Although the Government promised to allocate one million pounds yearly for the encouragement of the sale of Empire products in preference to foreign in the United Kingdom, in fact there has so far been an appropriation of five hundred thousand pounds only, and of this sum none has yet been spent. Of course, if the electorate in this country refuses to give the Government a mandate in regard to Imperial preference, it is impossible to give effect to the tentative agreement reached in 1923, and the one million pounds was estimated to be the equivalent of the benefit that the Empire would have received, had the original plan been carried out. But it is unfortunate, to say the least, that the present position of the Government should remind one of the man who "lived a life of going to do, but died with nothing done".

£10,000,000 East African Loan.

Although there is every reason to believe that the Government is anxious to introduce the £10,000,000 East African Development Loan Bill before Parliament rises for the autumn recess, doubt is expressed in well-informed quarters as to whether the Priority Committee, which is examining the various schemes put forward in connection with the loan, will have made its report in time to permit this to be done. The appointment of the committee in question was announced early this year, but, owing to the absence of one of its members, it could not sit until well into May. There are also grounds for supposing that the committee is engaged in a more detailed examination of the projects in question than was intended by the Government when its appointment was decided upon, and that unless the inquiry is considerably accelerated it will not be concluded for many months. Great disappointment will be felt both at home, where manufacturers will be badly in need of orders when the coal dispute is ended, and in East Africa, if the Loan Bill should be again postponed. It is nearly a year since the Government announced its intention of carrying out the recommendations of the East African Commission, and it is felt that ample time for a sufficiently close study of the matter has already elapsed.

South African Market.

It is satisfactory to find that visitors from the Union of South Africa, who bring first-hand knowledge of conditions in that Dominion, do not share the rather despondent views that are frequently expressed among business men here as to the future prospects of trade with the Union. Mr. F. S. A. Graves, the Secretary of the Association of Chambers of Commerce of South Africa, who has been on a visit to London, is convinced that the political situation in South Africa has not introduced, nor is likely to occasion, anything inimical to British trade interests. From a practical point of view the abolition of the 3 per cent preference was, he said, of little or no importance, and British manufacturers had gained in many directions by the tariff revision. His optimism on this matter may not be shared by all exporters on this side, but it is encouraging to find one who is in close touch with South African business men confident that our trade with the Union will show steady expansion, if only British manufacturers are alert to seize their opportunities and study the requirements of the market.

Canadian Trade and Finance.

Weather Forecasting and Crop Reports.

Montreal, 1st July 1926.—Until science has developed more accurate methods of long-time weather forecasting, crop reports coming in the middle of June require suspended judgment but interest in agriculture is general throughout Canada and popular discussion continues to centre around probable developments. The conditions of the crops in the Prairie Provinces are two to three weeks ahead of last year. In many cases the statement is made that crops are in fine condition. A few districts reported need for rains in May and early June, but since then abundant rains have fallen throughout the West and crops are reported in excellent condition. Manitoba reports that wheat now shows a healthy stand and is about ten inches above ground. In Saskatchewan the season opened with an abundant supply of moisture in the ground and general rains and showers have since fallen, maintaining an adequate supply of moisture. From Alberta, we learn that conditions in the northern and central portion of the province are generally satisfactory but the portion of the Province south of Calgary was practically without any rainfall during May, with the result that while all the crop on summer fallow stood well, that on stubble and fall and spring ploughing suffered considerably; however, recent rains served to improve the situation and optimism concerning the present condition of the crop is general.

The Dominion Bureau of Statistics estimated that 13% of the Ontario fall wheat acreage has been winter killed. In other words, out of 801,577 acres sown to wheat in that province, 104,200 acres have been destroyed. This is the most severe winter injury reported in any year since 1918 when winter killing reached 56%. Continued unseasonable spring weather prevented crops from reviving and also delayed seeding which was fully three weeks later than last year. For a time the outlook was discouraging but subsequent rainfalls improved the situation materially and seeding was completed under favourable conditions. Oats, barley and mixed grain have shown excellent growth and hay and pastures have materially improved.

In the Niagara peninsula the fruit trees are in bloom. A full crop of sweet cherries, plums and pears is anticipated but there are indications that the peach and apple crops will not be more than 50% of normal. Grapes and raspberries, while damaged to some extent by cane freezing, give promise of a fair crop. Strawberries are showing up well, but will be unusually late. In Quebec the season has been very backward, seeding operations began late in May and the farmers had to buy feed for stock because of the fact that they were unable to turn their stock out to pasture.

As a result of the favourable prices received for last year's crop of potatoes, the acreage of this crop in the Maritime Provinces will be increased this year. Farming operations have been delayed from three weeks to a month, but seeding is now completed. The soil is reported in excellent condition. The pastures give promise of an abundant supply of grass. Apple trees wintered well and are reported to be in a healthy condition.

The Okanagan and Kootenay Districts of British Columbia report continued promise of an excellent yield of apples and stone fruits. A heavy "June drop" is expected but even so, much thinning will be required. Throughout the province the season is about two weeks earlier than usual putting the farmers on a better competitive basis as compared with the farmers on the United States side whose produce usually reaches the Vancouver market two or three weeks earlier than that from our side of the line. Crops have generally made good growth, and indications suggest that in spite of cold weather in the early part of May, the strawberry crop will compare favourably with the average for this district.

The Cattle Market.

The British general strike, while it lasted, had a very disturbing effect upon the Canadian Cattle Market. Not knowing whether cattle shipments could be unloaded, or if unloaded, whether they would be sold, exporters were out of the market. Steers of export quality suffered a price decline which was reflected to some extent in the price of other grades of cattle. With the cessation of the strike, export shipments have again been going overseas in considerable volume. The total shipments this year to date have been in excess of 40,000 head; this is 10,000 ahead of last year and a still further increase over the year before.

While earlier in the year the great majority of Canadian cattle landed in Great Britain

were destined for immediate slaughter, a considerable number are now going out to farms as feeder cattle. English preference for fresh beef as compared with frozen beef enables the feeder to secure a remunerative return on Canadian cattle, as there is now general admission that cattle imported from Canada and fed for a time in England are superior to those obtained from Ireland.

Because of the prevalence of the foot and mouth disease in Argentina, cattle from that country are not admitted to the United Kingdom on this basis. In order to meet this situation, Argentine cattle are now shipped to Belgium, fed for a time, slaughtered and then shipped to the United Kingdom as fresh beef. In this manner Argentina hopes again to secure the premium that is paid for fresh beef.

In spite of the low prices in the United States for corn fed cattle, the demand for stockers there continues strong and has resulted in the movement of a certain number from the Calgary and Winnipeg markets.

Cattle runs on all markets have been comparatively light. With coarse grains cheap and with abundant pasture available throughout the West, farmers show a tendency to retain on the farms all cattle which have not been winter fed in definite preparation for this spring's market. Moderate deliveries are producing somewhat firmer prices and choice export steers have been selling at about $7.00 per cwt.

World Wheat Situation.

The protein content of Canadian wheat averages so much above that of wheat from other countries that there should be even more price preference for the Canadian farmer than is now obtained, but it is doubtful whether such recognition will come so long as chemical analysis is not given definite weight in the established standards for wheat grading. Neither United States nor Canadian standards give a recognition to this factor, that results in increased return to the farmer producing extra fine wheat.

Protein content of the wheat constitutes an index of the gluten content in the flour. Flour with high gluten content is more nutritious, absorbs more water, and will make more loaves of bread per barrel. Standards of bread making in Canada and the United States have reached a point where bakers pay close attention to the chemical content of their materials with the result that they are willing to pay premiums for better flours. When this was first realized, millers were able to pick up odd lots of good quality wheat in a particular grade without paying more than the average price for the particular grade. Now, however, the situation has changed. A recent statement in "Wheat Studies" is to the effect that:—"There are great variations in the protein content of wheats of a given grade. Consequently, because of the importance of this factor in millers' requirements, there is commonly a far greater range of prices for wheats of the same grade but of different protein content, than between average prices for adjacent grades."

To a great extent the farmer has failed to profit by this new criterion of wheat values because his wheat is sold almost entirely by standard grades. The dry land farmer who produces under conditions of high cost both because of summer fallowing and frequent loss of crops is the farmer whose wheat would receive most recognition under this new standard. Recognition of protein content as a factor in grading wheat will do much to aid many of the farmers who are now marginal producers and will also raise the general level of the quality of the wheat produced. In the long run, standardization of a type which gives full credit for quality benefits both the producer and consumer.

In line with the idea concerning the importance of emphasizing protein content is another suggestion pointing out the advantages of a policy of keeping low grade wheats off the market and using these grades for feed purposes. Not only do low grades have a disproportionately bearish effect upon the market but they also tend to injure the reputation of the region from which they are derived. Strict maintenance of present standards has gone far to reward quality production but because of the high quality of our wheat further refinement of standards in terms of protein content will be particularly advantageous to Canada.

Last year we called attention to the probability of an increasing wheat consumption in the Far East as a result of the higher standards of living under the new industrial regime. Figures that have since become available show decreasing rice consumption accompanied by increasing demand for wheat. Oriental trade with Canada is increasing at a surprising rate. In the year ending in April, 1926, Canadian exports to China had a value of $25,717,000 compared with $6,357,000 in the previous year and exports to Japan had a

value of $36,824,000 as compared with $21,748,000 for 1925. Nearly half of the value of these exports was wheat and this would seem to indicate a buying power which will, in those countries, enable them to purchase wheat even at the prices prevailing during the past year. It is hard to estimate the possible demand from this quarter in case there were a world surplus with corresponding price reductions. Recently Japan has placed a high tariff on wheat that may tend to cut down these imports, but a large proportion of the wheat imported by Japan is ground and exported to the Asiatic market so that no substantial decrease in demand from this quarter is to be anticipated.

In contrast with this favourable news concerning increasing demand one must also note a tendency toward increased production. An average world production of 3,500 million bushels in the years 1920-24 must be compared with the 3,700 million bushel average in the years 1900–1913. Apparently this comparison is quite favourable but in these figures Russia is credited with an average pre-war production of 760 million bushels. The southern hemisphere shows a 100 million bushel increase most of which comes from the Argentine; the United States and Canada each show a 150 million bushel increase and production in Europe—ex-Russia, has increased by 200 million bushels. Yet the actual production in Russia shows an interesting trend. 1921—205 million bushels, 1922—242 million bushels, 1923—330 million bushels, 1924—331 million bushels and 1925—577 million bushels. These figures together with the news concerning the introduction of modern agricultural machinery seem to indicate that it will not be long before Russia attains pre-war production levels. For some time to come there will be a question as to what proportion of the Russian crop can be exported. It seems quite evident that the peasant will consume a larger proportion of the crop than he was permitted to consume under the old regime. How much this may mean in relation to wheat consumption remains to be seen.

The balance of demand and supply in wheat is something that is very nicely adjusted and no such important factors as the possibilities of Russia and Siberia must be left out of the picture, but there seems to be an almost equally great possibility that demand in Russia and in the Far East may keep abreast of increased production in the quarters mentioned. If this is true, no great oversupply is to be looked for, except in those years when large crops are harvested throughout the world.

Sesqui-Centennial International Exposition.

India Installs 'Jungle'.

Philadelphia, 21st June, 1926.—All of the luxuriant growth which characterizes the dense forests of India will be found in the jungle which is now "growing" in one section of the India Building at the Sesqui-Centennial International Exposition in Philadelphia.

Seductive paths and winding trails will thread the labyrinth which will be filled with palms, vines, shrubbery and exotic flowers peculiar to India.

Many small animals and birds native to the Oriental country will inhabit the jungle and a python sixteen feet long will be captive there. Stuffed examples of tigers, leopards and other large species may also be found.

The entrance to the spot will be through a great sculptural arch, now being completed, and the maze will terminate in a glowing sunset scene.

The idea of the jungle originated with the Indian authorities only last week, and it is expected that within ten days it will be ready for the exploration of Sesqui visitors.

New York's Sesqui Building.

Governor Alfred E. Smith, of New York, dedicated the replica of Washington's Headquarters at Newburg-on-the-Hudson on the grounds of the Exposition last week. The building is one of the two which the State is erecting for the Exposition.

"I am pleased with the progress of the buildings and with the location which New York has chosen on the grounds," the Governor said. "It is my hope that the 11,000,000 citizens of New York State will visit the Exposition some time before December 1."

Those in the ceremonial party aside from Governor Smith and Mayor Kendrick consisted of Mrs. Alfred E. Smith; Major and Mrs. John A. Warner, the latter the former Miss Emily Smith; Miss Katherine Smith, daughters of the Governor; Mrs. W. F. Kenny; Mrs.

Carl Espy; General Franklin W. Warner, Adjutant-General of New York; Major-General William M. Haskell; Brigadier-General George R. Dyer, and W. H. English

WOMEN'S GYMNASTIC MEET.

The first national women's championship gymnastic meet in the United States will be held in Philadelphia June 25, under the direction of the Exposition. The events will be held in connection with the national men's A. A. U. gymnastic championships, in which a team of Germans will compete. June 25 will be a busy night as the Sesqui-Centennial amateur boxing tourney will open that night.

SOUTH CAROLINA TO CELEBRATE BATTLE.

The Sesqui-Centennial of the Battle of Fort Moultrie in South Carolina, to be celebrated on June 28 throughout the State in commemoration of the saving of the Carolinas for the Union, is in harmony with the Exposition.

The fort of green palmetto logs, outside of Charleston, South Carolina, whose soft wood the solid shot of the British fleet was unable to batter down in 1776, is a symbol of the integrity which the enemy was unable to break, and which encouraged the forces of Government struggling for existence in Philadelphia.

The battle, fought less than a week before the proclamation of the Declaration of Independence, marked the British failure at Charleston, and will be recalled with special ceremonies this year which designates the one and one-half century mark of American freedom.

The Washington Light Infantry of Charleston, famous historic command and a member of the Centennial Legion, will take part in the observance, fresh from the history-making Flag Day celebration held in dedication of the Sesqui-Centennial Exposition in Philadelphia.

The celebration of June 28, 1926, as the winning of the Battle of Fort Moultrie in the Carolinas, will be reflected throughout the thirteen original states as a fitting memorial to a day vital in American annals.

CHILDREN'S THEATRE FEATURES.

A children's theatre, modelled after the famous Little Outdoor Theatre in the Luxemburg Gardens in Paris, occupies the copy of Washington's stables in High Street on the grounds of the Exposition. A committee of the Art Alliance, under the direction of Miss Clara Woodward, will be in charge.

The building follows the outline of the original stable at Tarrytown, where Washington kept his twelve horses and coaches.

The small auditorium is finished in rustic fashion. Around the sides are seats for parents and there are accommodations for 75 children.

Pupet shows, dramatic performances put on by public schools, movies and story telling constitute the programs, which are brief and will be repeated at frequent intervals.

Other attractions very near the children's theatre include a large doll house replete with the fittings of a grown-up's abode, and an original covered wagon in the stable shed, which once was used in crossing the plains.

The use of stables for the performances of itinerant players in the olden days will be exemplified in this modern "barn-storming" of the Washington stable in High Street.

LARGEST LOCOMOTIVE EXHIBIT.

The largest and most powerful electric locomotive in the world has been installed for exhibition in the Palace of Transportation.

Built by the General Electric Company for the Chicago, Milwaukee & St. Paul Railway to haul its Olympian and other Chicago-Seattle trains through the Rocky Mountains and the Cascade Mountains, the giant locomotive left Tacoma, Washington, a month ago on a journey of 3000 miles to reach Philadelphia. Because of its immense size it was necessary to make several detours to reach Philadelphia, as movement under bridges and through tunnels on the direct route was impossible.

The locomotive is known as the bi-polar gearless type and operates from an overhead trolley. It is seventy-six feet in length and has twenty-four driving wheels. Twelve motors placed directly on the driving axle propel the monster. The cab is in the centre.

George C. Lincoln, Philadelphia representative of the Chicago, Milwaukee & St. Paul Railway, and Frank J. Newell, travelling passenger agent, who superintended the installation of the exhibit, declared that by utilizing the natural resources of the mountains, the use of electrical energy created by water power has brought about a saving to the railroad of 265,000 tons of coal and more than 35,000,000 gallons of fuel oil annually.

Special entrance and exit platforms enable visitors to the Sesqui to pass from one end of the locomotive to the other to observe the details of construction and operation.

EVOLUTION OF MEN: A PAGEANT.

The evolution of human freedom, from prehistoric times to the present day, will be depicted in a colossal spectacle in thirty tableaux at the Municipal Stadium in the grounds of the Exposition, now being held in

Philadelphia. The production, "Freedom," will have its first performance on Saturday evening, July 3. The spectacle is the greatest ever attempted on any stage in the world.

The huge show has been produced and will be managed by R. H. Burnside, former director-general of the New York Hippodrome. The scenario is by William W. Matos. The production is in thirty tableaux and will be staged upon a specially-constructed stage 200 feet by 300 feet, with a proscenium arch 135 feet wide and forty-five feet high, and flanked with towers of equal height for the housing of the electrical equipment.

Beginning with prehistoric times, the growth of freedom will be traced in the days of Egypt, Greece and Rome, through the Middle Ages, the Reformation, the Elizabethan Era, the French Revolution, and the Napoleonic Era to the Victorian Age. The second half of the production will commemorate the birth of American freedom, celebrated in the Sesqui-Centennial with a dramatization of the American Revolution, beginning with the Boston Tea Party, and ending with the capitulation of Cornwallis at Yorktown and the establishment of the new Republic with the inauguration of Washington. The finale will be a great tableau, "The Golden City of Peace," with electrical effects never before attempted and here possible only because of the magnitude of the presentation.

A performance of "Freedom" will require the services of more than 5,000 persons, more than 200 horses, a herd of camels, a troop of elephants and other animals. The performers will include more than 100 principals—singers, solo dancers, entertainers and actors of all descriptions—a great chorus, a ballet corps, a regiment of soldiers, a large detachment of sailors and marines, an orchestra of 125 pieces, a swarm of "extra people" and a small army of highly-specialized theatrical workers—electricians, property men, scene-shifters, wardrobe employees and the like. More than 25,000 costumes will be required.

Indian Economic Notes.

The Seventh International Exhibition of Rubber, other Tropical Products and Allied Industries will be held in Paris between the 21st January and 6th February 1927. The Exhibition has the official support and active collaboration of not only the French Industrial Organizations but also of other Governments. The Indian Government, however, does not propose officially to participate in the Exhibition. Side by side the Exhibition there will be International Conferences, scientific and technical, run during the Exhibition. Those who are interested in the Exhibition can obtain any further information they require from the Consul-General for France at Calcutta.

Destruction of Wild Animals.

During the year 1925, 1,381 persons were killed by wild animals and snakes in the Bombay Presidency. Of these, snakes alone were responsible for 1,325, as compared with 1,124 in the previous year. The highest number of deaths on account of snakebite was recorded in Ratnagiri, namely 258 persons; next in order comes Thana with 171 deaths; Thar Parkar 95; and Larkana 80. The total number of wild animals destroyed was 6,905, as compared with 6,190 in the previous year; while the number of snakes was 22,078, as against 23,383 in the previous year. Ratnagiri was responsible for the destruction of 9,234 snakes; Dhangs 1,236; Thar Parkar 4,513 and Sukkur 1772. In all 61 tigers were destroyed during the year, Kanara alone being responsible for 31.

Travancore Match Factory.

A correspondent writes under date 26th June :—It was rather a disappointing news to the public at large that the Malabar Match Manufacturing Company at Mudikkal had to cease works, though temporarily, on the discovery of the fact that *eetta* is not so fit for match sticks as was originally intended. The Company is, nevertheless, active in its experimental operations. The present idea seems to be to try with some light woods such as elavoo, punna, etc. The factory will, no doubt, recommence works ere long.

Industrial Enterprize in India.

That the prospects of industrial enterprize are improving in India is indicated by the steadily growing number of companies registered, and the increasing amount of capital invested therein. In 1925-26, 473 companies were registered, with an authorized capital of Rs. 30 crores, against 411 companies with an authorized capital of Rs. 21 crores in 1924-25. Another test of improvement is the decrease in the number of companies that went

into liquidation. In 1924-25 such companies numbered 502, with an authorized capital of Rs. 59 crores, whereas in 1925-26 the number was 473, with an authorized capital of Rs. 35 crores. Even in the cotton industry, which is admittedly in a depressed condition, there were 13 new mills during the year. In joint-stock enterprise Bengal far out-stripped Bombay during the year. The authorized capital of the companies registered in Bengal in 1924-25 was a little less than Rs. 5 crores, while that of Bombay was Rs. 8½ crores. But in 1925-26 the Bengal figures advanced to Rs. 16 crores while Bombay's remained practically the same This is evidently due to the planting enterprize, which received an extraordinary impetus during the period. It will be remembered that Indian joint-stock enterprize enjoyed a boom in the years 1919-21, and then came the crash. A noticeable feature in connection with the improvement now recorded is the low amount of average capital of each company. In the pre-war year the average amount of capital of each company registered was about Rs. 19 lakhs. This rose to Rs. 29 lakhs in 1919-20, but in succeeding years began to go down until in 1924-25 it was only Rs 5 lakhs. In 1925-26 this average increased to about Rs. 6½ lakhs.

Back Bay Reclamation Scheme.

On the 19th May last the Government of India announced their decision, with the approval of the Secretary of State, to appoint a Committee of Enquiry in connection with the Back Bay Reclamation Scheme, and added that the *personnel* of the Committee and the terms of reference would be announced later. The Committee has now been constituted, and will consist of the following :—*Chairman*. Sir Grimwood Mears, Chief Justice, Allahabad High Court. *Members*.—Sir M. Visvesvaraya, K.C.I.E., D.Sc., M.I.C.E., Sir Frederick Thomas Hopkinson K.B.E., M.I.C.E., and Mr S. B Billimoria, M.B.E. The Secretary will be Mr. R. B. Ewbank, C.I.E., I.C.S The terms of reference to the Committee are as follows :—*Firstly*, to enquire into the history of the inception and conduct of the Back Bay Reclamation Scheme ; *secondly*, to make recommendations as regards future operations. The Committee will meet in Bombay on Monday, 2nd August, 1926.

In April the Bombay Government appointed a committee of engineers to check and revise the estimates on which the tables in the second *ad interim* report of the Advisory Committee were based. Estimates of the expenditure necessary for the execution of the whole or of any part of the scheme, which the Committee now constituted may require will be prepared for it by the Development Department on the basis of the figures approved by the committee of engineers. The Director of Development and the Secretary to Government in the Development Department will attend meetings, when desired, to give such advice and information as may be necessary The report of the Committee will be forwarded to the Government of India, who have decided to place it before the Committee of Inquiry now set up.

Agricultural Exhibition at Madras.

We note in *Digest* No. 46 of the Madras Department of Agriculture, the following :—In connection with the Provincial Co-operative Conference held at Madras during Easter week the Agricultural Department gave an exhibition on a big scale This was specially designed for the benefit and education of the delegates to the Conference and laid stress on the research side of the departmental work. Every section was represented and a number of officers were in attendance to explain the exhibits. The Director of Agriculture himself was also in regular attendance at the exhibition and explained things to many of the visitors. A small model dairy was established and the staff of the Imperial Dairy Expert from Bangalore gave daily demonstrations of clean milking and butter making Messrs Parry & Co. occupied the centre of the hall with a display of agricultural machinery, and Messrs. Shaw Wallace & Co. displayed sulphate of ammonia which they are making preparations to place at the disposal of the ryots from depots scattered about the Presidency In addition to this the Madras circle officers gave an exhibition of their own, showing the work being done in the neighbourhood of Madras to help and educate the ryot in improved methods of agriculture. The Exhibition was very largely attended and generally voted a great success.

Economic Enquiry Committee.

Dewan Bahadur Rangachariy has given notice of a resolution he intends moving at the forthcoming session of the Assembly recommending to His Excellency the Governor-General in Council that he may be pleased to approve the Majority Report of the Indian Economic Enquiry Committee of 1925 and take early steps (*a*) to introduce a scheme of economic survey outlined therein and for the purpose he be further pleased to establish a central bureau of statistics to replace the

present attenuated department of statistics; (*b*) to circularize the Provincial Government's suggesting starting suitable provincial statistical bureaus to work in collaboration of the Central Bureau to make an immediate beginning by providing for allotment out of central revenues an initial cost of Rs. 31.87 lakhs as also substantial portion of Rs. 57.55 lakhs required for recurring expenditure from the next financial year 1927-28; (*c*) to make arrangements for compiling estimates of income and wealth for religions and individuals for the purpose of measuring economic growth of the country and (*d*) to invite Indian States to undertake economic surveys on parallel lines and to join British India in common organization for collection and publication of statistical data and results relating to economic condition of their people. The articles we have published in this *Journal* will, we hope, prove useful to those who are to take part in the debate.

No Protection for Coal Industry.

The following is a Resolution [No. 47-T (78), dated the 17th July, 1926] of the Government of India in the Department of Commerce :-

"The report of the Tariff Board on the question whether a protective duty should be imposed either on all imported coal or on coal imported from any particular country or countries was published for general information on Friday, the 16th July."

The Government of India accept the unanimous finding of the Tariff Board that the case for a protective duty on all imported coal has not been established. The facts reported by the Tariff Board show that an additional duty on coal imported from South Africa might be imposed under Section 8A of the Indian Tariff Act, 1894, but the Government of India accept the finding of the majority of the Board that in present circumstances action under that section is not advisable.

Exports of Pig Iron from Bengal in 1925-26.

The Report on the Maritime Trade of Bengal for the official year 1925-26 states :- The total output of the three principal producers amounted to about 863,000 tons. The quantity exported advanced from 340,171 to 380,762 tons, but owing to the fall in prices ruling the value declined from Rs. 216 lakhs to Rs. 175 lakhs. Japan's takings dropped from 171,614 to 168,188 tons but exports to the United States of America again increased from 133,165 to 156,064 tons.

Punjab Mining Industry.

The Punjab mining industry is relatively unimportant. During recent years it has, however, received a great impetus from two sources, states the Punjab Administration Report for the year 1924-25 : firstly, the discovery of mineral oil in large quantities in the Attock district ; and, secondly, the introduction of Punjab coal in the local markets of the province. Oil springs had been known for many years to exist in the Rawalpindi and other districts in the Punjab, but the output was insignificant until the discovery of the Khaur field which still remains the only place where oil has been struck ; the Whitehall Petroleum Corporation having this year failed to locate oil, though boring operations were continued to a depth of over a mile. Previous to 1922 the maximum annual output of the province was attained in 1918 when the War rendered import from abroad costly and difficult. The output then reached ¾ million gallons, but it fell subsequently, and in 1921 was only 59,000 gallons. But the completion of the new road from Fatehjang to the oil-field at Khaur and the laying of a pipe line from Khaur to Rawalpindi enabled Attock oil to be put on the market at a reasonable price. Owing to this opening up of the oil district the output of oil rose to 7½ million gallons in 1922, and 11¾ million gallons in 1923, the output for 1924 being practically the same (11.4 million gallons). The revenue from mines increased from about Rs. 1 lakh in 1921-22 to Rs. 1½ lakhs in 1922-23 and nearly Rs. 2 lakhs in 1923, the slight decline in 1924 to Rs. 1.7 lakhs being mainly due to delays in certain payments

The coal output was only 77,000 tons, a slight increase on last year (62,000 tons). Compared with the total Indian output of over 18 million tons this amount is insignificant, but the possibilities of development seem greater when once adequate communications are provided. The salt industry is more important. In the Punjab rock salt from the Salt Range and Kalabagh mines is manufactured by Government agency under the control of the Northern India Salt Department, a branch of the Commerce and Industry Department of the Government of India. The output rose from 114,000 tons in 1923-24 to 160,000 tons in 1924-25, the increase being mainly due to the reduction in duty from Rs. 2-8 to Rs. 1-4 per maund.

Indian Taxation Committee.

The report of the Indian Taxation Committee devotes twenty-six pages to a review of the policy of restricting the consumption of liquor and drugs in India. Amongst other

things reference is made to the place which excise revenue will occupy in the future finances of the country. Twenty-two crores of rupees or 14 per cent of the tax revenue of India (in Bihar and Orissa 40 per cent) will have to be found. And the cost to enforce the law and to deal with those who break it at least an additional 4 per cent of the whole of the present tax revenues of the country. The Committee refers to the United States of America where the cost of practical prohibition in a preventative service was in 1923. 13½ crores of rupees with sentences on breakers of the law amounting to 2.781 years, and cases of law infringement accumulated that will take 50 years to try! The cost to India of the first stage of prohibition is given as five crores of rupees, and the Committee further note that a continuance of the policy "will involve the exploitation of every alternative source of possible revenue".

CO-OPERATION AND CAPITALISTIC PRINCIPLES.

Mr. Wolff has something very instructive to say on the danger of the spread of capitalistic principles in the co-operative movement. He writes to *The Bengal Co-operative Journal*: As regards your own province I am greatly pleased to read of the spread of Co-operative Irrigation. But to be quite frank I am just a little alarmed at your rejoicing over the spread of capitalistic principles in your co-operative movement. You rejoice over the receipt of substantial deposits from Mahajans and other capitalists and of the practice spreading of taking attachable security as pledged in the place of character. But it is the power of lending on the security of character and the promise of successful enterprize that constitute the merit and the strength of co-operative banking. The substantial deposits made by Mahajans should be very welcome, but they are withdrawable thrift deposits made by members and other folk make 'good, lying money,' which is in practice found not to be readily withdrawn. Look at the many millions of money handled by our Co-operative Wholesale Societies. That is for, for the most part, simple deposit money. Readily attachable security also frequently declines in value, more particularly security in land. Many Co-operative Societies have lost heavily by lending by preference upon it. You must have some loans lent on real security, including mortgages. But these investments ought to be kept within limits. I am very curious to see how you will in India solve the problem of mortgage borrowing. Your land system presents particular difficulties. They seem grappling with the question more or less in all promises. For housing purposes you must needs have financial support from outside, whether from Government or from other bodies. Ordinary land mortgage credit you could deal with independently.

DEPARTMENT OF INDUSTRIES, BOMBAY.

In view of the reorganization of the Department of Industries the Government of Bombay (Transferred Departments) have appointed a Committee consisting of the following members to consider the future development of the Department: -Mr. C. G. Freke, I.C.S. (*Chairman*); Sir N. N. Wadia, K.B.E., C.I.E.; Mr. J. Addyman; Mr. Lalji Naranji; Khan Saheb A. Mansuri; Khan Bahadur D. B. Cooper; Honourable Mr. Manmohandas Ramji (representing Indian Merchants' Chamber), Mr. J. R. Abercrombie (representing the Chamber of Commerce, Bombay). Mr. A. H. Dracup will act as Secretary to the Committee.

The Committee are asked to report on the following points: -(1) The present functions and working of the Industries Department and the activities which the Department should undertake in the future. (2) The qualifications and pay of the future personnel of the Department including the appointment of Director, necessary to secure a suitable staff. (3) Whether in view of the present financial situation of the Government of Bombay any extension of its activities in the immediate future is possible. (4) Whether State-aid to Industries is desirable and if so to what class of industries it should be extended. The Committee will meet in Bombay. The date and place of meeting will be fixed by the Chairman.

QUEBEC TIMBER.

The "record" figure of 1,500,000,000 ft. is given as the advance estimate of the 1925-26 cut of timber by the officials of the Departments of Lands and Forests of Quebec. Indications are that the season will be one of the most active, at least as far as pulp-wood is concerned, for many years past. The figures given are interpreted as meaning that there is an increase of one-third over the average cutting out in the last ten years and some 250,000,000 ft. more than what was estimated to be the average for the 1920-30 period. Reports received in Quebec show that there are already 3,500 lumber camps operating throughout the province.

Topics in the Journals.

Preferential Tariffs of the British Empire.

On the special request of the Publishing Committee of *Industrial Canada*, Mr. Bristol, Manager, Tariff Department, C.M.A., has written a very instructive and comprehensive article on the preferential tariffs of the British Empire and what the British Dominions and Colonies have to offer Canada in the way of preferential market. It is an article worth careful study as it enables us to know what exactly preferential tariffs and preferential tariffs of the British Empire in particular mean. The article brings out vividly and concisely the pregnant possibilities of developing trade within the confines of the British Empire through preferential tariffs. British subjects everywhere will gladly lend their support to all practical policies that tend to harmonize and closely knit the ties of the Empire. Foremost amongst them is the development of trade between the various countries that constitute the British Empire in preference to alien nations. Incidentally it runs very close to that fundamental policy of giving first choice to "Home productions". The general trend of policy of every Industrial nation in the world moves towards protection of "Home" industries and tariff bargaining with other countries as the most favoured nation treatment with regard to her principal exports. How this general policy affects the British Empire is an interesting thing to observe, when we study the tariffs of the countries and colonies of the British Empire.

The raising of tariff walls round the industries of Great Britain and Dominions have been mainly actuated by the motive of protecting and expanding the local industries against the aggression of foreign competitors.

As manufacturing required articles in the colonies are still in the embryo state, they only levy a tax on necessary imported goods for the explicit purpose of revenue. Preferences are extended to articles of the British Empire in United Kingdom and Dominions except India and Newfoundland. In the cases of Australia and New Zealand, the stipulation for preferential treatments is that 25% of the factory or works cost of goods shall be British labour or material.

There is no uniformity in the tariff policies of the various British countries but on the following point they are almost concurrent, that is, if a tariff concession is offered to a foreign country it is also extended to British countries in the same line. The deviation from this rule is the example of Newfoundland in its importation, free of duty, vegetables from Spain, while she levies duties on the same goods from Canada.

In tracing the evolution of the United Kingdom's tariffs policy, the author dwells on its growth from levying of taxes on imports for revenue purposes only to levying of taxes for safeguarding the local industries and the subsequent improvement of preferential treatment to British countries.

The following extracts from the article of Bristol will give us a clear idea of the tariffs of various countries of the British Empire :—

(1) *Newfoundland.*—"Newfoundland extends no tariff preferences to Canadian goods. She does, however, extend a 25% tariff preference to Jamaica, that is, her general tariff rates are reduced by ¼ in favour of Jamaica."

(2) *Australia.*—"To admit goods of British origin on the most favourable terms possible consistent with the development of local manufacture."

"To grant a reasonable measure of preference to reciprocating friendly countries."

"All British preferential tariff rates of Australia are extended to New Zealand and on some articles even lower rates of duty are granted. Certain special rates are extended to South Africa but this list too is limited. Canada is the only country to which Australia extends any of the rates under the intermediate tariff."

Since April 1, 1925, goods as a rule must contain 75% British labour and for material in their factory or works cost in order to qualify for Australian preferential tariff treatment.

(3) *New Zealand.*—"The New Zealand Government has adopted a very definite policy in favour of British goods and, generally speaking, the sentiment in favour of British products is exceedingly strong.

"This policy of the New Zealand people to favour British goods is reflected in the customs tariff rates which whilst affording protection to local manufacturing industries, set substantively higher rates of duty on imports from foreign countries than apply against similar imports of British production."

(4) *South Africa.*—"A new tariff bill was recently adopted by the unions of South Africa. The new tariff increased custom duties on many lines of articles which can be economically manufactured within the union; and the preferential tariff rates in favour of British goods were greatly curtailed. At present preferential tariff rates of duty are granted to the United Kingdom under about 25 items of the tariff, to Canada under about 12 items, to Australia under about 4 items and to New Zealand under about 5 items of the tariff." In this new tariff provision is made for South Africa to enter into bargaining arrangements with foreign countries in return for preferred markets obtainable in such countries for South African products.

(5) *British West Indies.*—"The colonies have adopted a preferential tariff on goods of British Empire origin. Where the colonies impose import duties the tariff preferences in favour of Empire goods range from ¼ to ½ of the tariff rates, assessed on foreign goods."

(6) *Irish Free State.*—"Since the free state has come into being two tendencies have been noted in its tariff policy: first, protection for local industries and second, no further extension of Empire preference."

(7) *British India.*—"In the year 1924 upon the recommendation of the Indian tariff board, protective duties were placed on iron and steel and also on

cotton. India does not extend tariff preferences to any country whatsoever."

(8) *Ceylon.*—"No preference is granted to British goods."

(9) *Straits Settlements.*—All articles enter free of duty except liquor and tobacco.

(10) *British East African Colonies.*—These colonies impose duties only for revenue purposes so far.

(11) *British East Africa.*—No preference is granted to British goods. Imposition of duties on imported articles is solely for revenue.

Northern and Southern Rhodesia.—"The tariffs are principally for revenue purposes. Preferences are extended to Empire goods ranging from 3% *ad valorem* for revenue purposes. A preference is extended to Empire goods amounting to 3% *ad valorem* on practically all manufactured articles."

(12) *Cyprus.*—"Tariff principally for revenue purposes. A preference is extended to most Empire goods of from $\frac{1}{6}$ to $\frac{2}{3}$ of the duty."

(13) *Fiji.*—"The tariff is principally for revenue purposes. An Empire preference is granted of $12\frac{1}{2}$% *ad valorem* on most articles."

(14) *Samoa.*—"The tariff is principally for revenue. But an Empire preference is granted of $7\frac{1}{2}$% *ad valorem* on most goods."

Present-day Ideas of Education.

Mr Alexander Irvine, the author of "My Lady of the Chimney Corner," has a very moving and significant article in the *Teachers' World*, in which he tells of a remarkable speech made by a man who had never made a speech before. It was an utterance which lingers in the memory:

"About one hundred and fifty students who had just received their degrees met for a final dinner, before they separated to go into various parts of the world, probably never to meet again. They had been so surfeited with dignified drivel during the four years at college that they decided to omit the address at the final function.

"Of two hundred professors there was one man whose criticism of college addresses was well known. He had never made an address in his life, and it was suggested, more as a joke than with any serious intent, to invite him to deliver the address. If they had imagined for a moment that he would accept the invitation he never would have been asked. He accepted, however, and the committee decided to let the class grin and bear it.

"I Have Something to Say."

"The dinner took place in one of the world's greatest hotels. The banqueting hall was known far and wide for its artistic arrangements and luxurious furniture. The young men were dressed in conventional full evening dress. Most of them were future captains of industry. During the course of the dinner there was a good deal of joking and some speculation about the professor's address. When the dinner was over, the chairman rapped for order, and introduced the speaker.

"'Gentlemen', he began, 'I never made a speech in my life, and I don't intend to begin now. I have something to say, however, and in saying it I will follow Luther's three-fold rule: "Stand up straightly, speak out boldly, and sit down quickly."'

"'We are in one of the famous banqueting halls of the world. Belshazzar's hall compared to this was a lodging on the third-floor back. No such art existed in those days as we see around this room. No such viands graced his board. What there was, there was elegant for that day, but we live in another age, an age of art, art-craftsmanship, and luxury. From the four corners of the earth came the things on this table. From the lowest forms of day labour, to the highest forms of art, we have around us samples of at least a hundred forms of human work.

"Take this Table-cloth."

"'I take this table-cloth, to begin with. It is of most exquisite workmanship. It involves weaving—to go on farther back—bleaching, smoothing, designing. It is a damask linen, beautiful and most pleasing to the eye. I want to ask you a question: Is there anyone here who knows from personal experience anything about the labour involved? Have any of you ever contributed any labour to the manufacture of table linen? I am serious, gentlemen. If any of you have, I would like him to say so.' There was absolute silence. 'I understand, then,' he continued, 'that the making of such a thing is beyond your ken.

"'Let me draw your attention to the samples of pottery here. Surely the men and women who produce such beautiful things are artists. What a joy it must be for a man to hold such a thing in his hand—complete—and say, "I made it!" Many forms of labour are involved here, also—the digging of clay, the carting, fashioning, painting, burning, baking and finishing. If there is a man here who has ever touched this form of labour let him answer. No one!

"'There are samples of the most exquisite, and, I know, costly, cut glass. That also involves much labour and great art. It is a unique industry in itself. I will not detail the process; we see the result, but the various forms of labour involved are practically unknown to us. I would be rather surprised to find a man among you who had ever touched this industry at any angle.'

Nothing Escaped His Notice.

"In his way he went over the silver, and dwelt rather lengthily on the subject of mining and the life of a miner. Nothing escaped his notice. He drew attention to the carpet and rugs on the floor, to the curtains and drapery of the great windows, to the mural decorations, executed by the greatest living mural painter. There was a rich fresco around the room. He called attention to it. When he had gone over most of the things in the room he turned again to the table.

"'There are cut flowers here,' he said. 'Most of you spent some years in the study of botany but I don't think any of you would undertake to give us a complete classification of what we see and enjoy on the table.' There was a disposition to laugh, but he wiped the smile from every face around the table by quietly saying, 'perhaps you are to be congratulated that you are at an age when a sense of humour covers a multitude of sins, but personally I cannot enjoy that which gives me pain.'

"'I am a representative University man, seriously asking myself and you whether the system we call education educates?' The silence became oppressive. The men were thinking.

Does the University Educate?

"'Perhaps,' he continued, 'I should have put you more at ease by telling you at the beginning that I have never experienced the joy of fashioning articles with my own hands. Nor anything useful for that

matter. Here we are, then, a group of men on whom a University has set its stamp. We produce nothing we eat, we could not even lend a hand in making of anything we see around us, and truth compels me to venture the suggestion that in ninety-nine cases out of a hundred the chief motive of a college education is to escape actual participation in just such work as gives or ought to give joy to the worker.

"'A timekeeper performs a useful function; so does a cash register, but the function of education is not to turn out timekeepers or cash registers. It has been truly said that if ten Bachelors of Art were wrecked in mid-ocean they could not build a pontoon to save their lives! They would be equally helpless in any critical emergency where practical knowledge of the ordinary things around us was imperatively necessary. A statement of the problem is not a solution, and we do not gain much by stating that the system is to blame and we are not.

"To Enter My Protest."

"'You certainly are not to blame. You are the victims of whatever system we have. I cannot say that I am blameless. I do not believe that a smattering of languages, of mathematics, and history is education. I believe the system of cramming these things to pass an examination is pernicious. So, having been asked for the first time in my life to make an address, I made it an opportunity to enter my protest.

"'Education is to prepare and equip for the duties and responsibilities of life- not to turn out industrial and commercial bosses, gaffers, timekeepers, and cash registers. I would hardly be justified in taking up your time with these observations alone. So, in addition, I want to say this: Most of you are destined to be masters of men. You will organize and mobilize their labour, you will oversee it.

"'When you see men around you actually creating beautiful things with their hands, I would like you to remember that it was my opinion that actual labour in the arts and crafts and industries is an infinitely nobler contribution to the happiness of mankind than clipping coupons and living on the sweat of other men's brows.

"'It will not come in our day, but the world will ultimately come to understand that the training of the mind is as necessary as the training of the body. Why should it be considered an unthinkable thing that a blacksmith or a carpenter should need an education? Why should college men consider it degrading to handle tools and make useful and beautiful things?

"'Why should a University perpetuate such a revolt against Nature in which the man who does no useful work at all is considered a gentleman, and the creator of wealth and beautiful thing should be considered low caste, in Anglo-Saxon civilization?

"'I want to point out to you that the highest form of culture and refinement known to mankind was ultimately associated with tools and labour. In order to do that I must present to you a picture, imaginative, but in accord with the facts of history and experience.'

The Master Builder.

"He pushed his chair back, and stood few feet from the table. His face betrayed deep emotion. His voice became wonderfully soft and irresistingly appealing. The college men had been interested; they were now spellbound. He raised his hand, and went through the motions of drawing aside a curtain.

"'Gentlemen,' he said, 'may I introduce to you a young Galilean who is a master builder—Jesus of Nazareth!'

"It was a weird act. The silence became oppressive. As if addressing an actual person of flesh and blood, he continued.

"'Master, may I ask you, as I asked these young men, whether there is anything in this room that you could make with your hand as other men make them?'

"There was a pause, a brief moment or two then with the slow measured stride of an Oriental he went to the end of the table, and took the table-cloth in his hand, and made bare the corner and carved oak leg of the great table. In that position he looked into the faces of the men and said: 'The Master says, "Yes, I could make the table—I am a Carpenter!"'"

Silver Position.

Cotton and Finance states:—

The decision of the U.S.A. Senate, reported by the press, approving the Pitman Bill, which authorizes the Treasury to purchase fourteen and a half million ounces of silver, at a dollar an ounce, for the purpose of coinage, is interpreted as the earnestness of desire on the part of the government of that country to support silver mining industry. The decision by itself is not of far-reaching importance as its sentimental effect, for the Bill authorizes the Treasury to purchase only 14½ million ounces of silver out of a world production of 246 million ounces. Besides, the Bill refers to purchases of silver of American origin only and it is of a permissive nature, not mandatory, compelling the Treasury to purchase the same at once. Recent cable advices state that the action to be taken under the Bill is postponed for six months. A government purchase of 14½ million ounces is not an unusually big affair

For a pretty long time, the consideration of this Bill by the Senate was postponed from time to time and it seemed as though there was no eagerness on the part of the Senate to hurry up the Bill. The fact that the Senate has chosen this time, when the Indian Currency Commission is about to issue its report, is not without its purpose. For the past many months, since Sterling began to appreciate in terms of gold, there was a gradual fall in the Sterling price of silver in London, and consequently, prices fell down both in India and China in sympathy. In other words, while silver price appears to have been weak, as a matter of fact, the gold value of silver has not shown any appreciable weakness. A statistical table published elsewhere will clearly bring forth all the salient factors regarding the price movements of the white metal during the last two years. From the point of view of supply, the position is getting healthier. The pre-war record year of production was 1912, when the would output was 231,000,000 ounces, and since then, with the progress of the war, production was restricted until 171,000,000 ounces were reached in 1921, when there was the civil war in Mexico. Productions in 1922, 1923, 1924, and 1925 were 210,000,000, 246,000,000, 239,000,000, and 246,000,000 ounces respectively. Hence, from the point of view of supply there is no cause for anxiety. A few months ago, it was reported that new mines were discovered in Sardinia. Then, if at all there is anything to affect the future course of silver prices it must be the demand. India and China are the only two important countries of the world that use silver for principal currency and

for the past four or five years the Government of India have not put in their appearance in the silver market. Besides an estimate of more than 3,000 million silver rupees in actual circulation, the Government of India have a reserve of 800 millions of silver rupees against note issue. It is very unlikely that the Government of India will require any further silver, at any rate in the near future, putting aside the consideration of the issues involved by the recommendations of the Currency Commission now sitting. According to the Director of the U.S.A. Mint the consumption of silver for currency purposes in 1923 was 233 million ounces and in 1924 it was only 120 millions, while figures for 1925 are not yet available. The large purchases in 1923 were mainly on account of the Continent, U.S.A. and China, for subsidiary coinage, when there was a corner, as it were, in gold by the Federal Reserve Bank. In 1924, Germany was the principal buyer, who consumed 21 million ounces and during the last year, although actual figures are not yet available, it can be safely said that there was not any large demand for coinage purposes It may not be out of place to mention here that the trend of opinion in the world is in favour of Gold Standard and the abandonment of silver for principal currency. The increasing use of currency notes, cheques, and other credit instruments stand in the way of free purchases of silver for monetary purposes In India itself the fate of silver is in the balance and in the course of the next few weeks the position will be clear. In China, the absence of a strong central government has led to much hoarding and the silver stock in Shanghai is abundant for her present requirements. Signs are not wanting to show that the Chinese are taking a greater interest in gold than before

Silver is used for making jewellery, etc., besides monetary purposes. The world is passing through an economic transition, when the relations between capital and labour are strained. The general wage earners and middle class men, who are the largest consumers, have not sufficient savings to invest in silver. As for the use of silver for photography, etc., the depression in trade is impressive.

India is the largest consumer of silver and China stands only next. Shipments from the United States, Canada, Mexico and England to India and China in 1925 and 1924 were as follows :—

	1925 million ozs.	1924 million ozs.
India	106.5	108.2
China	59.2	41.7

During the last two years India alone consumed a little less than half of the world's total production Owing to five successive favourable monsoons the balance of trade was always in favour of India and while the prices of import articles being comparatively too high, there was a large influx of the precious metals in those years. A careful study of the comparative importance or otherwise of both of these metals shows that there has been rather an inclination to import gold than silver The following are the actual figures :

	1925 Lakhs Rs.	1924 Lakhs Rs.	1923 Lakhs Rs.
Net imports of precious metals (Private) ..	81,06	63,96	59,03
Net imports of gold (Private)	60,83	45,21	39,21
Percentage of gold to total precious metals ..	75.0	70.7	66.4
Net imports of Silver (Private)	20,23	18,75	19,82
Percentage of silver to total precious metals ..	25.0	29.3	33.6

The above figures will clearly show that during the last three years while the percentage of gold imports has been increasing that of silver has been decreasing. The increased demand for gold has been just like that of other countries, which were attempting at stabilization of the various gold Exchanges, and India was a keen competitor in the world market.

Malaria and Agriculture in Bengal.

There is an article in the *Bengal Co-operative Journal*, for July 1926, about "Malaria and Agriculture in Bengal", which should interest every agriculturist in India. Though it is written in special connection with the irreparable devastation that malaria is subjecting Bengal, similar conditions everywhere in India make the article a possible solution to combat the havoc done by anopheles.

The spread of this disease has laid waste lands which were fertile and prosperous some 50 years ago in Bengal, through high death mortality. Dr. Bentley, for some time the Director of Public Health in Bengal, says that a close association is always perceptible between malaria and agricultural conditions, and that whenever this disease is rampant, it is invariably followed by decay of agriculture and decline in cultivation. In the words of Dr. Bentley :-

"The close association between malaria and agriculture is due to the fact that the relative prevalence of malaria is largely influenced by the same conditions as determine either a good or bad harvest. Thus two of the factors which determine the outturn of crops, namely (1) adequate and seasonal rainfall, and (2) liability to enriching inundations with silt bearing river water, also exert an important influence upon malaria, heavy rainfalls and widespread inundation of the land surface tending to check the breeding anopheles mosquitoes, whereas short and scanty rainfall favour their increase.

"What is the cause that has brought about this change? Briefly says Dr Bentley, it is the want of facilities for ingress and egress of rain and flood water which is responsible both for a great decline of agriculture and the deterioration of public health that has accompanied it."

In suggesting the ways and means to prevent the breeding of mosquito larvæ he writes in his valuable report "Inundation with flood water is a most powerful safeguard against malaria, and it is by preventing this that embankments cause malaria. Now inundations prevent malaria owing to 3 reasons, firstly because flooding reduces the 'dangerous 'water edge' which affords safe cover for mosquito larvæ; in the second place, because owing to the large surface exposed to the rays of the sun, the temperature of the water tends to rise so as to be exceedingly unfavourable to the life of the anopheles larvæ and in the third place, because the physical and possibly chemical character of river water is inimical to anopheles larvæ."

For preventing the disease spreading to healthy and unaffected areas Dr. Bentley has got the following to say :—

(*i*) Prohibition of further embankments.

(*ii*) Survey of existing embankments and their water-ways.

(*iii*) Survey of river channels and their water-courses.

(*iv*) The mapping out of local spill areas and lines of drainage.

(*v*) Improvement of existing water-channels.

(*vi*) Examination of existing local water tables.

In those areas where malaria has got a steady stronghold the way of combating is still more perplexing and complex. He advises direct attacks on malaria.

(1) Use of quinine,

(2) destruction of the adult insect or larvæ,

(3) obliteration of breeding place by filling them up,

(4) use of mosquito nets,

(5) protective clothing or medicaments which tend to repel adult mosquito.

This method of direct campaign may be considered feasible to small areas. But costly direct action is a financial impossibility when faced with the problem of tackling with vast affected areas. But Dr. Bentley holds for the palm of hope, that is, Bonification.

"Now Bonification means the utilization of river silt for the fertilization of land and the mitigation of malaria—that is the improvement by drainage and by silt deposit not only of the agricultural value of the land treated but also as a rule of the climate of the areas dealt with." And the net result Dr. Bentley says, will be (1) "Reduction in the numbers of the local anophelene carriers of malaria ; (2) Increase in the number of the local human population ; (3) Increase in the prosperity of the local human population.

Bonification may be either by drainage or by irrigation. "All that is wanted" says he, "is the genius that can devise means for bringing the water that is at present being wasted to the land that is now lying waste."

The Suez Canal.

In the course of a lengthy article in the *Nineteenth Century*, Mr. H. Munro Fox writes:—

"The Suez Canal has now been in existence for over half a century. During this time very few studies have been made of the migrating fauna, but the few facts concerning the past which we have at our disposal tend to show that the canal population was not previously so rich as it is to-day. The inhabitants were fewer in numbers and less varied. The marine life now present in the canal waters did not all rush in as soon as the path was opened in 1869. Some entered at once but others hesitated for many years at the two entrances before deciding to make the journey. A very good instance of this is furnished by a certain kind of swimming crab. This crustacean is called a swimming crab because instead of always creeping on the bottom, as most crabs do, it has some of its legs flattened as paddles with which to swim. The crab is a staple article of food in Egypt ; consequently it is an easy matter to find out at what places on the coast it occurs in numbers and where it is caught for sale. Now, before the canal existed Suez was the only place on the Egyptian coasts at which this crab was found, and for twenty years after the construction of the canal it was still known only from Suez. It had not yet entered the canal. Then it suddenly took the plunge. In 1889 these crabs were first caught in the Bitter Lakes. Year by year after this they were taken further and further to the north, until in 1898, they had reached Port Said. To-day these crabs are engaged in marching, or rather swimming, to right and to left around the Mediterranean coasts. They are not only taken at Port Said for sale in the market, but also at Alexandria to the west and at Haifa in Palestine to the east. Thus these crabs find the waters both of the Bitter Lakes and of the Mediterranean quite congenial. Yet they hesitated a long time before deciding to invade the canal.

The Reason.

To what was this hesitation due ? There are two possible explanations. The canal, as originally made, was only eight yards deep. To-day its depth is twelve yards. The first stage in the work of increasing the depth, in order to accommodate larger ships, was undertaken in 1885. At the same time the channel was widened. The work was completed in 1896. This period almost coincides with the years in which the crab passed through the canal. Can it be that previously the waters were not deep enough or wide enough to please the crab ? This may have been the cause, but a second possibility suggests itself.

Before the canal was dug the basin of the Bitter Lakes was a dry valley. This valley was filled with sea water in 1869. Water poured in simultaneously from north and from south. The process took six months before the hollow was filled with water up to sea level. Now, we have already seen that a salt bed exists on the floor of the Bitter Lakes, due to the drying up of a former arm of the Red Sea. In 1869, as soon as the water of the Mediterranean and of the Red Sea flowed into the dry basin, this water commenced to dissolve the salt. The solution went on rapidly, so that after three months, when the basin was as yet only half filled, the water was almost saturated with sea-salt.

A Groundless Objection.

A very slight digression may be permitted at this point, as it is historically most interesting. Certain critics of de Lesseps, the constructor of the canal, had urged that the scheme was doomed to obvious failure. The reason given was that, as we have seen, the waters of the Bitter Lakes would start by being saturated with salt, and then the great heat of the Egyptian summer would cause so much evaporation from the surface of the lakes that more and more salt would be deposited on the floor of the lakes until finally they would be completely filled up by salt. The relatively narrow canal running into the lakes would be insufficient to counteract this salt deposition by bringing in new water from the sea. Of course this objection has turned out to be groundless, since the canal is quite large enough to pour water into the lakes and thus make up for the evaporation. On the contrary, far from remaining saturated with salt, the waters of the Bitter Lakes become year by year less salt as they are mixed with the outside sea water. The strong tidal stream in and out of the southern end of the canal must be largely responsible for this mixing.

But, to return to the late entry of the crab into the canal, it may well be that an earlier invasion was impossible owing to the very high salt content of the Bitter Lakes at the beginning. As we have just said, year by year the salinity decreases. Possibly in 1899 the crab was for the first time just able to stand the saltness of the lakes.

Other Types of Life.

As to the direct effect of this unusual degree of salinity upon the creatures inhabiting the Bitter Lakes, the Cambridge expedition found just the contrary of what they had expected. Most usually when aquatic organisms inhabit waters different chemically from the waters to which they are accustomed these organisms become stunted in growth and deformed. Therefore the expedition had expected to discover in the Bitter Lakes fish and shell-fish undergrown or misshapen. They found just the opposite. There was no trace of deformity, and, more remarkable still, most creatures were as well grown as their relations in the open sea, and some were actually considerably larger. To choose out two examples from many, the pearl-oyster and the sole were quite as fully developed as they are in the sea. Incidentally, the soles of the Bitter Lakes proved most delicious eating. Catching them is a difficult sport. They are speared as they lie on the sand in shallow water in the still early morning. The fish lies quite still, half buried in the sand with only the eyes visible. The inexperienced fisherman does not know on which side of the eyes is the body of the fish and makes many a useless shot.

Of animals which grow larger in the Bitter Lakes than in their natural homes two examples are very striking. The grey mullet comes south from the Mediterranean in shoals to spawn in the lakes. While there these fish grow to a size as big or bigger than they ever attain in the sea. And there is a long black worm as thick as the thumb It is a near relation of the so-called sea-cucumber, relished for the table in China This worm in its Red Sea home never becomes over a foot in length, but in the Bitter Lakes it grows to 2 feet 6 inches.

In conclusion, a prophecy may be made concerning the Bitter Lakes. Before the sea water was let into the dry basin a boring was made by de Lesseps to discover the thickness of the salt bed. It was found to be 40 feet. From soundings made periodically in the Lakes it is now known at what rate this salt is dissolving in the water. This enables one to calculate that in the year 2033 A.D. the last trace of salt will have disappeared. After that the waters of the Bitter Lakes will no longer be bitter and it will be time to study the Suez Canal fauna anew.

Mosaic Disease of Sugarcane.

Digest No. 11 of the Madras Department of Agriculture has a timely note on the Mosaic disease of sugarcane. We read:

A disease of sugarcane called "mosaic disease", or "mottling disease" has for some years been known in the sugarcane-growing countries of the world. The disease has recently been noticed in several provinces in India. In the Madras Presidency the disease was first noticed during 1925, and has so far been reported from Godavari, South Arcot, Coimbatore, Malabar and Trichinopoly.

2. *Symptoms.*—As the name implies, the disease is characterized by a peculiar mottling of the leaves. On viewing a badly infected field from a distance, it shows a yellowish tint, instead of a healthy dark-green colour. On a close examination of an infected stool, the general discoloration is found to be due to innumerable whitish, or at times yellowish, blotches on the leaf surface. The blotches are elongated. They possess irregular margins. The pale areas interspersed with the normal green form a distinctive feature, the details of which may vary with different varieties, and at times in different specimens of the same variety. In certain varieties, *e.g.*, Java-Hebbal, and Vellai, the normal green colour appears only as a few irregular islands on a light background. In Poovan, on the other hand, green forms a background for irregular, white, elongated blotches.

Mottling is a feature on all the leaves of a diseased shoot: in some cases it is striking, in others careful examination is necessary to detect its presence. In some varieties of cane, the mottling caused by mosaic tends to become obscured with the age of the leaf. The symptoms of this disease are unmistakable on the youngest leaves of the shoot and are noticeable as soon as the leaves unfold. The disease is different from entire chlorosis where whole shoots turn pure white or yellow, and from partial chlorosis where yellow stripes run along the whole length of the leaf.

Cause.—Nothing is definitely known about the exact cause of the disease. In spite of considerable search for a causative organism, neither fungi nor bacteria have been found in the affected plants. It has been suggested that the disease may be due to a virus, *i.e.*, an organism too small to be detected even under the most powerful microscope.

Effects.—The disease does not kill the affected cane, but in countries where the disease has been in existence for several years, a material reduction in the output of cane and sugar is reported. Diseased plants have been observed to respond to heavy manuring, but are never known to be equal to healthy canes similarly treated. The loss in Porto Rico has been estimated to be about 40 per cent, while in Hawaii and Trinidad it has varied from 3 to 50 per cent.

Transmission.—Though very little is known of the exact cause of the disease, extensive experiments carried out in other countries have proved that there are two methods of transmission:—

(1) Through diseased setts.

(2) Through the agency of a sucking insect (*Aphis maidis*). Setts from diseased stools invariably produce diseased plants, and it is through this agency that the disease may have largely spread over almost the whole world. The second agency, the insect, is capable of carrying the disease from an infected cane to a healthy one in the neighbourhood.

Control measures.—The disease is incurable. It occurs under all conditions of soil, climate, cultivation, and manuring. No curative measures have as yet been devised, and safety seems to lie in resorting to two measures:

(1) The use of setts from mosaic-free clumps for planting.

(2) Roguing, or systematic removal of the affected stools in a cane field as soon as the disease is noticed.

Setts for planting should be obtained from a locality where the disease is entirely absent. If this is not possible they should be got from selected disease-free plants. The selection should always be done before the leaves are cut, and any stool showing mosaic symptoms on the leaves should be discarded. After planting, the seedlings should be systematically and periodically examined, and affected stools should be removed and burnt in order to prevent infection of healthy plants through insects. Wherever a cane field is seriously infected, the whole crop should be crushed and no canes used for seed. The field should be thoroughly cleared of all diseased material, such as growing fragments of old stools, weeds, etc., and wherever possible a rotation of crops introduced in order to insure security against re-infection.

Reports made by growers and others interested in cane cultivation to the circle officers concerned will greatly help the Mycologist in keeping a close watch

on the distribution of the disease in this Province. The Department are making necessary arrangements to control the spread of this disease as far as they can, and the departmental officers will give sugarcane growers all the assistance in their power to deal with it and carry out the remedies described above.

Calm of the Englishman.

Whence comes the astonishing calmness of the English race in times of crisis, that calmness which enabled a general strike to be lived through without a shot being fired and which is, indeed, a puzzle to the whole world? The average Englishman has in his veins the blood of many races. He is the combined product, from far-off times, of Celts, Saxons, Scandinavians, and Normans, and that product, moulded over centuries in the special climate of England, has given him the mingled balance, adventurousness, and sense of reality tinged with romance which are his fortunate heritage, says John Blunt in the *Daily Mail*:—

What Emerson wrote many years ago of the English remains true to-day.

It is in the deep traits of race that the fortunes of nations are written; and however derived—whether it was a more gifted tribe or mixture of tribes, the air, or what circumstance, that mixed for them the golden mean of temperament here exists the best stock in the world.....best for depth, range, and equalibility, men of aplomb and reserve great range and many moods, strong instincts, yet apt for culture.

The calmness of the average Englishman is not the phlegmatic calmness of some northern races, but rather an imaginative calmness which knows that excitability is liable to distort judgment and that nothing is to be gained by violence or exaggeration.

The English character is extraordinarily sane. It has developed from various races a blend of qualities that by balancing one another, as it were, tend to eliminate extremism in any one direction.

Compromise has been said to be the basis of our constitutional laws, but it is a compromise founded upon a knowledge of character and not upon a weakness of will.

When put to some great test the English are extremely determined, as was seen in the war and as has been seen again in the general strike, but once the crisis is over and the battle won there is singularly little bitterness, and the main idea is to "come together" again for the good of everyone.

The Englishman does not lose his calmness or good humour during a crisis, and therefore he does not have to recover them spasmodically after the crisis is over.

And having an imaginative romantic mind—English literature is far the richest in the world in imagination and romance—the Englishman is always able to see his opponent's point of view and thus, while not yielding his own ground, to insist on fair play. The qualities that have made us pioneers are the qualities that make us just in our dealings.

Articles in the Reviews.

The Calcutta Review, *July* 1926.—Principles of Railway Rate-making. By S. C. Ghose, Lecturer, Calcutta University.

Journal of the Royal Society of Arts, *July* 2, 1926. Indian Section "The New Delhi". By Herbert Baker, A.R.A., F.R.I. B.A.

The Madras Bulletin of Co-operation, *July* 1926.—The Co-operative Movement—Official and Non-official Agencies. By Rao Bahadur A. Vedachala Iyer, B.A.

The Bengal Co-operative Journal, *July* 1926.—Indigenous Banking in India. By S. K. Ganguly, B.A.

Books in Brief.

Short Reviews of Recent Books.

The Economic Problem.

By R. G. Hawtrey, Author of *Currency and Credit*, etc. Longmans, Green & Co. 10 *sh.* 6 *d.* net.

This is a work that stimulates thought and as such we felt, as we read it through, that it requires a longer review than we usually publish in this section. But delay in noticing it would be unfair to its author and its publishers and hence our regret in preferring a shorter notice of it. It is a sign of the times that Economics is coming to be more and more recognized as, after all, something connected with human *beings* and not with mere human *machines*. Mr. Hawtrey has, in characteristic fashion, relied for his study on the allied Sciences of Psychology and Ethics, History, Geography, Anthropology, etc. His conception of the economic problem he states in a sentence. It is "the problem of joint action by a community of men". He rightly insists that it is a problem both of the ends to be sought and the means to be employed. The existing economic system, based upon individualism, tempered by State action in certain directions, is one possible solution. He examines this solution and subjects it to a searching criticism. (See Chapters I & II.) He writes:—"The problem of so employing human motives in the interest of joint action is one of Social Service, as also is the problem of the limitations imposed by the nature of that joint action upon the range of ends to be selected. But the problem of selecting the ends within these limitations is one not of science but of philosophy." There are many interesting chapters in the work to which special attention should, in our opinion, be invited. Of these are the ones dealing with the Labour Market Finance, Distribution of Population, the State, Mercantile Imperialism, Export of Capital, Protective Tariffs, Wages and Labour Movement, Collectivism, Nationalization, and Taxation and Saving. It will be seen how exhaustive the work is and how well the author has covered his ground. Some of the questions included are what are called questions of the hour and the views of so sober and impressive a critic as Mr. Hawtrey, ought to prove highly suggestive to those interested in current-day economic problems. Under "Finance", some interesting remarks will be found as to modern banking practice in Europe and America. The chapter on "The State" will repay perusal. Those who are never tired of writing and speaking against State action in the economic field will find something attractive in it. We would quote a couple of sentences

from it: "The State is itself a part of the solution of the economic problem. For it is an instrument for regulating and directing human effort." Mr. Hawtrey's view is that the State has economic functions to perform and it does perform them. It essential function, according to him, is "to regulate human action by *authority*". Though the authority is to be exercised by individuals, it must be recognized by the members of the community who must obey it. A chapter allied to this is the other one headed "Human Nature and the State," in which the idea is developed that though this authority, which is limited by law, rests on *organized force* and supported by it, it *cannot* rest solely on it. It rests, as he well points out, on "the general acquiescence, if not active consent, of the members of the community," force being relied on "only in exceptional cases". Force, he defines, as "an effective threat of physical injury". The consent, he says, depends on the two sentiments of *loyalty* and *respect for law*. Loyalty to the State, when it becomes distinguishable from loyalty to the King, involves, he says, a conception of the public interest, the common advantage of the community as a whole. As regards respect for law, he recognizes certain limits to it. His words are worth quoting in view of the legislative activities of modern States: "As legislative activity grows, the limits within which obedience can be counted on to new laws are extended, but at the same time criticism becomes more prevalent among the reasoning members of the community. They are disposed to withhold obedience not so much from laws which make too great changes as from laws which conflict with their views of justice or their social ideals. Laws, if they are to command respect, must conform broadly to the morality of the people." This is no new principle that Mr. Hawtrey enunciates; while conceding this, we would suggest that it deserves iteration at the present time, especially in this country where the legislative machine is being ground to death for every conceivable purpose. The chapter on "Mercantile Imperialism" is good but it wholly lacks originality The fate of countries and peoples affected by this imperialism is left untouched. What economic results flow from Economic Imperialism? Are such wholly for good or wholly for bad? Do they affect both the Nations affected by its sway or only one of them? Mr. Hawtrey gives no thought to these problems. Mill's view is well known but the position to-day is such that it requires re-statement in stronger relief. What would Mr. Hawtrey say to the restriction against more than a limited number of Europeans or Americans entering Asiatic countries? No doubt European nations show a diminishing fertility, but the restriction itself would operate as a bar to the exploitation of those nations. What would be the effect—the economic effect—of such a bar? The fact must be faced that mercantile imperialism of the type he refers to has great incidental disadvantages attaching to it and carries with it its own seeds of decay. Trade is one thing and exploitation another; the mercantile spirit is good, but the imperialism that is combined to it and made to serve its ends in pushing trade to the detriment of the nations with whom commercial intercourse is sought, is wholly destructive of its purpose. If Mr. Hawtrey turns his attention to this problem in the next edition of his work, he will be doing a great service to students of Economics. Mr Hawtrey goes no further than the traditional lines in his treatment of Oriental immigration into regions already in the occupation of the White races Apparently he has given no serious consideration to it. Has a wholly mixed race the term "pure races" is a misnomer—any right to complain of want of "assimilation" or "absorption"? Similarly a country that has fed on immigration for ages has no right to object to it immediately the Oriental turns up. Race problems are not problems of consequence to any but those who set a high value on the colour theory of superiority. Mental and physical powers do not depend on colour any more than on the cephalic index. As Dr. Pickering put it many years ago, the more extreme the difference between the combining elements, the better will be the product, combining as it will the best elements of both. Fertility too is increased by such unions and the dying nations have by this means a chance of racial resuscitation. The French have developed this "no sense" for colour and the European and American races generally ought to do the same in their own interests.

The chapter on the "Export of Capital" is interesting, but here again Mr. Hawtrey, if he had wandered a little from the beaten track, might have said more and to the point in regard to the position of dependent countries like India. What is the effect of capital imported into India? What is its economic effect, not on England, the lender, but on the borrower, India? The tendency of English economic writers is to be insular in their exposition and Mr. Hawtrey has proved no exception to this unfortunate rule.

On Protective Tariffs, Mr. Hawtrey writes with his usual care, though he betrays a trace of bias for Free Trade. He sums up the weakness of the case for Tariffs thus:—"Protection checks external trade; it checks imports as well as exports. If it checks external trade it probably diminishes profits. It diminishes the business of the great interports. It diminishes the work to be done by the merchant fleet." He plumps for free trade, one would say. But he also writes: "The effect of protection is that, with a given level of foreign exchanges, there is more money floating about in the country. The national income, expressed in money units, is greater. Or alternatively, if the supply of currency and the national income be supposed to be stabilized, the foreign exchanges are made favourable by protection and the national income represents a greater command over objects of expenditure abroad. This is the kind of result at which the mercantilist rejoices."

We have left ourselves little space for the other topics discussed by Mr. Hawtrey, among these the chapter on "False Ends", which is very readable; "Nationalization", which is suggestive; and "Collectivism", which has the merit of being quite up-to-date with its references to Soviet Russia. In the chapter on "Taxation and Saving," Mr. Hawtrey writes on a subject which is of vast practical importance in most countries at the present moment. Tax laws go with efficient tax administrations, and he touches on both the themes. The limits of safe taxation are also discussed by him. The effect of taxation on money earning—to rely on money as the motive of economic action being the fundamental principle of individualism—are set down in fair fashion. In the case of a properly planned income-tax law, evasion on a considerable scale is, in his opinion, a practical impossibility, as it would involve "the laborious preparation of complicated false statements, which have to be made internally self-consistent, and to be defended at need in cross-examination". What is the effect of taxation on saving? Saving, it is true, promotes welfare, but what are the purposes of saving? Are they desirable? In judging of the effects of the encroachment of

taxation on savings, we must naturally have regard to the objects arrived at. The benefits of accumulation and the benefits of taxation, which is only another word for equalization of incomes, for securing social ends have to be dispassionately considered. Where better social ends are in view, he thinks that taxation may be justified, though even so the case for accumulation is a powerful one. Accumulation increases, as he points out, the taxable resources of the State, and a little waiting may secure both accumulation and social reform.

This is a typical English publication, it is wholly insular in outlook. India, which is worth a great deal, from a strictly economic point of view, to England is referred to only in *four places*—in a book of over 400 pages; once appropriately in the chapter headed "International Markets", to mention that India is just trying to become industrial; and on three other occasions without in any way touching her problems or the problems raised by her contact with England Until Mr. Hawtrey and able thinkers like him take up these subjects, they are not likely to add to the interest of Economics as applicable to India in her relations with England. C. HAYAVADANA RAO.

The Economics of Leather Industry.

By B. Ramachandra Rao, M.A., L.T., F.R.Econ.S., Lecturer in Economics and Commerce, Calcutta University. Published by the Calcutta University Press.

We feel we should congratulate Mr. Ramachandra Rao on the very practical and suggestive monograph he has produced in the *Economics of Leather Industry*. Though primarily dealing with Bengal, it is of wider application for the problem as stated for Bengal is *mutatis mutandis* applicable to the other provinces of India—and of Mysore as well which is well known for its tanneries. We rather think that his summary of suggestions deserves to be translated into the leading vernaculars of the country and the same distributed among those directly interested in the industry and among industrialists generally. The subject is of vast importance and is well worth the attention of the best manufacturing talent in the country Mr. Ramachandra Rao's appeal for organizing the tanning industry of India on a manufacturing basis is not made a moment too soon. With an adequate internal market for manufactured goods, the case for export of the raw material seems wholly a folly. Mr. Ainscough's idea that there would be less of import in boots and shoes, for instance, has not come true. The imports have shown an enormous tendency to increase. The book deserves the attention of *entrepreneurs* in India. The Calcutta University Press has to be congratulated on its neat printing and get-up.

Socialism for To-day.

By H. N. Brailsford, Editor, *New Leader*. Published by I. L. P. Publication Department, 14, George Street, London, S.W. 1 *Shilling*.

Mr. Brailsford's name ought to be sufficient to create interest in this brilliantly written little book. It is a *vade mecum* of what Socialists would do, if in power to-day. It covers every inch of the social and political field. No application of force; no military conflict; no revolution—but Parliamentary tactics is the method to be adopted to win power in the land. The sheet anchor of Socialist politics as enunciated here is constitutionalism and not direct force. Mr. Brailsford's sketch of what Socialist England—under a Socialist Government—would be, does not look like a *doctrinaire's* desire but a certainty, if Socialists got a chance. And who can deny they will not have the next chance? A book that deserves to be widely read in this country, if for nothing else at least to show what India might expect from a Socialist Government in England. Mr. Brailsford assumes at any rate that with such a Government in England, that India will "ultimately enjoy full Dominion status". He also states that sooner or later England will "submit to the League" all its disputes with "independent" Egypt. An Index to the book would prove useful.

The Indian Colony of Champa.

By P. Bose, Professor of History, Visvabharati, Santiniketan. Theosophical Publishing House, Adyar, Madras. Rs. 2.

Mr. Bose has made a valuable contribution to our knowledge of greater India by writing this little book, which is a welcome addition to that extremely interesting series "The Asian Library" issued by the Theosophical Publishing House. It covers ground hitherto little known to Indian scholars. Based largely on the studies of French writers who have worked on Indian remains, archæological and inscriptional, it opens up a vista which deserves a fuller gaze. The colonization of Champa, Southern Annam, took place about the 2nd century A. D. The foundation of the Kingdom itself dates from 190—193 A.D. according to the Chinese evidence available. The Kingdom of Champa was on the border of China and was in close touch with it. Much light is thrown on it from Chinese sources. The colonization of Champa seems to have been from Southern India, by the East Coast. Mr. Bose suggests, on good authority, that the first Indian royal dynasty of Champa went from the valley of the Godavari and Krishna "because the inscription of Vo-Can bears close resemblance to that of Rudradamana at Girnar and of Satakarni Vasishtiputra at Kanheri". The conquest was not a pure intellectual one—the imposition of the physical and intellectual culture of the Hindus amongst the inhabitants of Champa as amongst those of Java, Siam, Cambodia and other countries a proved fact. The story of Champa's rulers during a period of 1200 years is told briefly but in an interesting fashion. The culture was wholly Hindu—nay Brahmanical. Even the Hindu gods were transferred to Champa and temples came to be built for them in their new abode. The kings bear doubtless Hindu names. Mr. Bose's sketch of the rule of these kings covers three chapters full of admirably composed matter. (Chapters III to V.) The cultural history of Champa, Kingship in Champa and Art and Sculpture in Champa are other chapters which give us most welcome information relating to the work of these Hindu kings in their distant home. In the last of these is a section on Education in Champa, which indicates that the kings were proficient in Grammar, Philosophy and the Dharma Sastras. Panini was known; as also Saiva scriptures (probably connected with the Sakta cult) and the doctrines of Buddha and Mahayanism (Mahayana-jnana). The stories of the Ramayana and the Mahabharata were apparently well known, as the references to their heroes in inscriptions show. Not only every Indian scholar but also the lay reader interested in the spread of Indian culture should read this little book for himself. If he does, he will know the virility of Indian culture and civilization and their peculiarly great surviving qualities in alien countries.

Acknowledgment.

Papers read at the Indian Economic Conference, IX Session, 1926. Ananda Press, Madras.

The Mysore Economic Journal

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of all Economic Topics of Interest

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Report of the Royal Commission on Indian Currency and Finance.

A Summary.

INTRODUCTORY

The Royal Commission was appointed to examine and report on the Indian exchange and currency system and practice; to consider whether any modifications are desirable in the interests of India: and to make recommendations

Volume I of the Report of the Commission which has now been published, contains:—

(1) the Report which is signed by all the members of the Commission.

(2) a short note by Sir Norcot Warren emphasizing the fact that he joins in the recommendations in his personal capacity as a member of the Commission and not in any representative capacity on behalf of the Imperial Bank of India, and

(3) a Minute of Dissent by Sir Purshotamdas Thakurdas.

The following is a summary of the Report:—



E. HILTON YOUNG, M.P.
Chairman, Indian Currency Committee, 1926

INDIAN CURRENCY SYSTEM.

The present state of affairs and its defects may be briefly described as follows:—

(1) The system is far from simple and the basis of the stability of the Rupee is not readily intelligible to the uninstructed public. The currency consists of two tokens in circulation, with the unnecessary excrescence of a third full-value coin which does not circulate at all One form of token currency (into which there is an unlimited obligation to convert the other) is highly expensive and is liable to vanish if the price of silver rises beyond a certain level.

(2) There is a cumbrous duplication of reserves, with an antiquated, and dangerous, division of responsibility for the control of credit and currency policy,

(3) The system does not secure the automatic expansion and contraction of currency. Such movements are too wholly dependent on the will of the currency authority.

(4) The system is inelastic, the utility of the provision for elasticity made on the recommendation of the Babington-Smith Committee being affected by the methods of financing Indian trade.

(5) In consequence, the system has not the confidence of the public and without such confidence the uninstructed public will never be weaned from those uneconomic habits of hoarding and that disclination to investment which are now the worst obstacles to the progress of the nation.

The possible methods by which the defects in the present system might be remedied may be reduced to three, namely:—

(1) the perfection of the sterling exchange standard,

(2) the adoption of a gold exchange standard, and

(3) the adoption of a gold standard proper, with or without a gold currency

The sterling exchange standard, however perfected, would be open to the following objections:—

(1) The silver currency would still be subject to the threat implied in a rise in the price of silver.

(2) Were sterling once more to be divorced from gold, the rupee would suffer a similar divorce. Should sterling be heavily depreciated, Indian prices would have to follow sterling prices to whatever heights the latter may soar or, in the alternative, India would have to absorb some portion of such rise by raising her exchange. This danger is real, however remote.

A gold exchange standard could be secured by providing that the currency authority should undertake an obligation to buy and sell at the upper and lower gold points respectively unlimited amounts of the currencies of any of the principal foreign countries with a gold standard. The system would, however, have the following defects:—

(1) The silver rupee would vanish as soon as the price of silver rose above the melting point of the coin.

(2) It has not the simplicity which is essential to secure the confidence of public opinion, which is suspicious of the mechanism of an exchange standard and requires some link that is not only real but conspicuously visible between the currency of the country and gold.

The officials of the Finance Department prepared a scheme for the establishment of a gold standard with a gold currency. The scheme assumed the transfer of the management of the paper currency and the conduct of the Government's remittances to the Imperial Bank of India. The eventual position under the scheme would be as follows:—

(*a*) Gold coin and bank notes to be unlimited legal tender and silver rupees up to Rs. 50 only.

(*b*) Government to be under a statutory obligation to give gold coin in exchange for gold bullion.

(*c*) The Bank to be under a statutory obligation to buy gold.

(*d*) Bank notes to be payable on demand in gold coin.

(*e*) The new Reserve to consist of a gold holding of not less than 30 per cent, gold securities or sterling trade bills of not less than 20 per cent, and Government of India's securities and internal trade bills for the balance.

(*f*) The Bank to undertake to keep the Secretary of State supplied with funds to meet the sterling charges of Government.

(*g*) During the transitional period, the total of gold and gold securities in the Reserve to be allowed to fall as low as 30 per cent, if necessary.

Under this scheme, the Government would have for disposal some 200 crores of silver rupees, and would require £103 millions of gold for introducing the scheme in all its stages, while the cost of the scheme, as estimated by its authors, would be about Rs. $1\frac{3}{4}$ crores per annum during the first five years and thereafter from $\frac{2}{3}$ of a crore to $1.\frac{1}{2}$ crore.

The chief objects of the scheme are:—

(*a*) To eliminate the threat to the currency inherent in the possibility of a rise in the price of silver.

(*b*) To cure the uneconomic habit of the people of holding precious metals as a store of value.

The scheme is unacceptable for the following reasons:—

(1) A large extra demand for gold from India would cause increased competition for gold among the countries of the world and lead to a substantial fall in gold prices and a substantial curtailment of credit which, in their reaction on India, would on balance be unfavourable.

(2) The estimates of the amount and time of the demand are very uncertain: the decline in the value of silver might induce an enlarged absorption of gold for non-monetary purposes: a part of the note circulation as well as the whole amount of surplus rupees might seek conversion into gold: the reduction of proportion of the gold and sterling securities in the Reserve to 30 per cent during the transitional period is unsafe: and if the control of the currency is meanwhile transferred to a bank, any intensification of the absorption of gold might involve a restriction on credit conditions in a manner and to a degree highly detrimental to the country's economic progress.

(3) If silver were to be dethroned from its present position of India and if for several years India were to meet her own normal demand for silver by melting rupees, silver might conceivably fall below the level of 24*d*. assumed in the scheme, especially if India's action had the effect of making other silver-using countries follow suit.

(4) The proposals would inflict heavy losses on the poorer classes who have from time immemorial placed their trust in silver as the medium of exchange and as their store of value, and the effort to maintain the domestic price of silver irrespective of world price would probably fail.

(5) The effect of the announcement that the Indian Government propose selling silver equal to the world's production for three years would probably be felt in China, which might immediately set about securing the gold needed as a basis for instituting some form of gold exchange standard. This would throw out of gear the exchange with China and for a time paralyse the growing trade of the world with that country. India could not escape injury from a widespread dislocation of the kind.

(6) Insuperable difficulty would be encountered in obtaining the necessary credits. Both the Governor of the Bank of England and the Governor of the Federal Reserve Bank of New York view the proposal with alarm on the ground that it would retard the progress of the monetary re-construction in Europe, would upset world prices and would be fundamentally harmful both to India and to the rest of the world.

(7) The cost of the scheme would be substantial even at the lowest estimate were accepted.

(8) The attempt to induce gold currency could only be accomplished at the cost of insecurity to those countries which have restored their monetary standards, and at the risk of delay to those countries which are now seeking with reasonable promise to do so, and this uncertainty and delay are likely to produce higher interest rates, business disturbance and economic depression, with inevitable repercussions on the economic well-being and commercial prosperity of India.

A Gold Standard for India.

The economic reasons against putting gold into circulation are:—

(1) The greater the proportion of gold in circulation, the less the elasticity of the currency system.

(2) Gold in circulation is of uncertain value for the support of exchange, for so long as the public have the opinion of making payments in tokens or in gold, it is the surplus tokens and not the gold in circulation which will seek an outlet at a time of weak exchange.

It is, therefore, unwise to contemplate the introduction of a gold currency under any conditions that can be foreseen. At the same time, the people of India should be left perfectly free to decide through their Legislature, when the proper time comes and a gold

currency can be introduced without risk, whether or not they are prepared to confront its expense and to disregard its other disadvantages. Underlying the evidence of many witnesses in India there was the idea that gold was the most advanced form of currency and that other nations had long denied to India a privilege which they enjoyed and highly valued themselves. The war has taught Europe to do without gold coins and experience has aroused doubts of their utility. In returning to the gold standard the nations do not aim at a return to a gold currency. Some high authorities have, in fact, expressed the view that the circulation of gold is beginning to be regarded as a sign of backward civilization.

The standard with the Commission favour may be described as a gold bullion standard, the essence of which is that the ordinary medium of circulation in India should remain, as at present, the currency note and the silver rupee, and that the stability of the currency in terms of gold should be secured by making the currency directly convertible into gold for all purposes, but that gold should not circulate as money. An obligation should be imposed by statute on the currency authority to buy and sell gold without limit at rates determined with reference to a fixed gold parity of the Rupee but in quantities of not less than 400 fine ounces, no limitation being imposed as to the purpose for which the gold is required. Since gold bars are to be given in exchange for notes or silver rupees, not for export only, but for any purpose, this is not an exchange standard but an absolute gold standard.

A sound gold standard postulates a statutory obligation upon the currency authority to buy and sell gold at a price equivalent to the par value of the monetary unit, but with such an obligation that authority would at once become the cheapest market for gold in India in all ordinary circumstances. This would practically destroy the wholesale bullion market and the currency authority would, moreover, inevitably become involved in the performance of a task which does not properly belong to it. It is essential, therefore, that the conditions which are to govern the sale of gold should be so framed as to free the currency authority in normal circumstances from the task of supplying gold for non-monetary purposes. This can be achieved by fixing the selling prices of gold at rates which will enable the Bank to replenish its stock of gold without loss by importation from London.

As a result of the obligation to sell gold bars for all purposes, it is impossible to treat any gold coin as legal tender or to mint gold for the public; otherwise the gold from the reserves might in certain circumstances pass into circulation without any contraction in the currency and thus without fulfilling the essential purpose of securing the compensatory effect of the exchanges. The legal tender quality of the sovereign and the half-sovereign should therefore be removed. There should be no hesitation to sacrifice the shadow of an unnecessary, and in practice little used, gold coin of legal tender, in order to obtain the substance of a real gold standard.

In order to emphasize the fact that gold is the standard of value of the rupee, and that the one is convertible into the other, the Government should offer "on tap" savings certificates redeemable in three or five years, in legal tender money or gold at the option of the holder. They might be issued in denominations of 1 tola and integral number of tolas, and sold for legal tender money, rupees and notes, at a price which would give the holder an attractive yield in interest. These certificates would not stimulate a fresh demand for gold, but would constitute a powerful incentive to investment and a powerful antidote to hoarding, thus achieving the chief benefit that is claimed for a gold currency without any of the risk, expense and inconvenience involved in putting gold into circulation.

The termination of the anomalous provision by which one form of note, the paper note, is convertible by law into another form, the silver note, is an essential step in Indian currency reform which must be taken sooner or later. The existence of this obligation has in the past placed, and may conceivably again place, the currency system completely at the mercy of the price of silver. It entails keeping in the currency reserve, for the purposes of internal convertibility, a large stock of silver, which for external purposes is of little value. While no legal obligation for conversion into silver rupees should attach to the new notes referred to below, the obligation must continue in relation to the present currency notes so long as they remain in circulation, because the Government's promise to redeem them in rupees must be religiously kept. Again, it should be made incumbent on the currency authorities to make rupees and other coin freely available to the public in such quantities as may be required for circulation in order to foster the use of currency notes by establishing confidence in their practical convertibility. The proposal to terminate the statutory obligation implies that the coinage of silver rupees should be stopped for a long time to come, until the amount of silver rupees in circulation is reduced to the amount required for small change.

Concurrently with the first issue of notes of the new status, the currency authority should re-introduce one rupee notes which should be full legal tender and which, like other notes of the new status, should not be convertible by law into silver rupees.

The public should have a right to obtain change for the notes in some other form and a statutory obligation should be imposed on the currency authority to convert all notes, other than the one rupee note, on demand into legal tender money, *i.e.*, into notes of smaller denominations or silver rupees at the option of the currency authority. There should be no alteration in the legal tender character of the silver rupee.

It is impossible to discriminate scientifically between the purposes for which the Paper Currency and Gold Standard Reserves are maintained. With the removal of the legal convertibility of the note into internal currency, the way will be clear for the amalgamation of the two Reserves—a step which assimilate the Indian system to other currency systems. The combined Reserve will also be simpler and more intelligible to the public and can be made more efficient in its working.

A Central Bank for India.

The evidence has clearly brought out the necessity of a unity of policy in the control of currency and credit in a modern financial organization, if monetary stability is to be achieved. It is also essential for the development of banking generally that the foundations of the credit organization should be truly laid. This will only be the case if the commercial banks are able, when the necessity arises, to turn into cash a maximum of their assets with a minimum of disturbance to general conditions. It is only through the establishment of a central banking system with the facilities for re-discounting it affords

that this end can be achieved. This has been demonstrated by the economic history of the great trading nations of the world during the last half-century. The Central Banks in other countries are entrusted with the sole right of note issue and they are responsible for maintaining the stability of the currency. They are the custodians of the currency and banking reserves and of the cash balances of their Governments. Their business, in the main, is confined to that of a bank of the banks and of the Government. These functions of necessity require that the character of their business should be of the soundest. Such limitations upon their business prevent the Central Banks from transacting the every-day commercial banking business of the country and from entering into competition with the commercial banks. But, in times of stress, they intervene vigorously in the country's business by extending credit facilities liberally. They are primarily concerned with upholding the credit of the country and guiding its financial policy. India should perfect her currency and credit organization by setting up a Central Bank with a character framed on lines which experience has proved to be sound.

The question arises whether the Imperial Bank should be entrusted with the character or whether it should be a wholly new institution. The idea of utilizing the existing organization of the Imperial Bank is tempting at first sight, but on close consideration it will be found that the disadvantages outweigh the advantages. The Bank's charter would have to be amended radically so as to preclude it from undertaking a great many tasks which it now successfully performs as a commercial bank, thus depriving the country of the benefit of an elaborate and widespread organization which makes available to the community increased commercial banking facilities and assist in fostering among the people as a whole, the habit of banking and investment. It is preferable that the Bank should be freed altogether from the restrictions which its present charter imposes upon it, which clearly have their origin in the hybrid character of the functions which were originally assigned to it.

Its prestige and the convenience of its present policy of the extension of branch banking may be safeguarded in various ways. For example, the Imperial Bank could come to an agreement with the new Central Bank, whereby the latter would employ the former as its agents in the *mofussil* and, in consideration of this service, place at the disposal of the Imperial Bank such funds as would be required to enable the Imperial Bank's branches to become self-supporting.

A middle course is to confine the Imperial Bank's functions to those of a true Central Bank in the centres where adequate commercial banking facilities exist, and to permit it to do the ordinary commercial banking business in all those localities where there is no other reputable bank established. This would, however, destroy wholesome competition by eliminating the Bank from the field of commercial banking in all the important centres, while its hybrid character would be likely to weaken its functions both as a Central Bank in the important centres and as a commercial bank in the smaller centres.

The proper course, therefore, is to entrust the central banking functions to a new organization, endowed with a charter which wholly conforms to the requirements of a Central Bank. The new Bank would, no doubt, take over from the Imperial Bank such of its organization, staff, etc., as under the new order of things may become redundant for the purposes of the Imperial Bank, and from the Government a number of officials whose experience in the management of the currency would be of particular help to the new Central Bank. The new Bank might be called the Reserve Bank of India with its headquarters in Bombay, where the meeting of the Central Board should ordinarily be held. The Commission make various recommendations regarding the capital of the Bank, its Board and Management, division of profits, business of the Bank, its relations with the Government of India and the Secretary of State, the note issue and Reserve requirements, the provisions of the charter, etc. The main recommendations in this connection are :—

(1) Subject to the payment of limited dividends and building up of suitable reserve funds, the balance of the profits of the Reserve Bank should be paid over to the Government.

(2) The Bank should be given the sole right of note issue for a period of (say) 25 years. Not later than 5 years from the date of the charter becoming operative, Government notes should cease to be legal tender except at Government Treasuries.

(3) The notes of the Bank should be full legal tender and should be guaranteed by Government. The form and material of the note should be subject to the approval of the Governor-General in Council.

(4) An obligation should be imposed by statute on the Bank to buy and sell gold without limit as stated above, the conditions for the sale of gold being framed as described above.

(5) The Paper Currency and Gold Standard Reserves should be amalgamated, and the proportions and composition of the combined Reserve should be fixed by statute. The Reserve should be increased by Rs. 50 crores, *vide* (9) below.

(6) The proportional reserve system should be adopted. Gold and gold securities should form not less than 40 per cent of the Reserve, subject to a possible temporary reduction, with the consent of Government, on payment of a tax. The currency authority should strive to work to a reserve ratio of 50 to 60 per cent. The gold holding should be raised to 20 per cent of the Reserve as soon as possible and to 25 per cent within 10 years. During this period no favourable opportunity of fortifying the gold holding in the Reserve should be allowed to escape. Of the gold holding at least one-half should be held in India.

(7) The silver holding in the Reserve should be very substantially reduced during a transitional period of 10 years.

(8) The balance of the Reserve should be held in self-liquidating trade bills and Government of India securities. The "created" securities should be replaced by marketable securities within ten years.

(9) A figure of Rs. 50 crores has been fixed as the liability in respect of the contractibility of the rupee circulation. An amount equal to one-fifth of the face value of any increase or decrease in the number of silver rupees in issue should be added to or subtracted from this liability, and the balance of profit or loss should accrue to or be borne by the Government revenues.

(10) The Issue Department of the Reserve Bank should be kept wholly distinct from its Banking Department.

(11) The Reserve Bank should be entrusted with all the remittance operations of the Government. The Secretary of State should furnish in advance periodical information as to his requirements. The

Bank should be left free, at its discretion, to employ such method or methods of remittance as it may find conducive to smooth working.

(12) During the transition period the Government should publish a weekly return of remittances made. A trial should be made of the system of purchase by public tender in India.

(13) The cash balances of the Government (including any balances of the Government of India and of the Secretary of State outside India), as well as the banking reserves in India of all banks operating in India, should be centralized in the hands of the Reserve Bank. Section 23 of the Government of India Act should be amended accordingly.

(14) The transfer of Reserve assets should take place not later than 1st January, 1929, and the Bank's obligation to buy and sell gold should come into operation not later than 1st January, 1931.

(15) During the transition period the currency authority (*i.e.*, the Government until the transfer of Reserve assets and the Bank thereafter) should be under an obligation to buy gold and to sell gold or gold exchange at its option at the gold points of the exchange. This obligation should be embodied in statutory form, of which the outline is suggested.

The recommendations summarized above should be regarded as a comprehensive whole. Modifications of any of their integral parts may involve the danger of destroying their balance and so preventing the efficient and smooth working of the whole.

Stabilization of the Rupee.

The system of currency recommended implies the adoption of some fixed gold parity for the rupee and the stabilization of the rupee at that parity. There is no event in the foreseeable future which would be likely to make conditions more favourable for the purpose of stabilization than they are at present and the outcome of which ought to be awaited. Stabilization should, therefore, be effected forthwith.

The Rupee should be stabilized in relation to gold at a rate corresponding to an exchange rate of 1*s.* 6*d.* for the Rupee for the following reasons:

(1) At the present exchange rate of about 1*s.* 6*d.* prices in India have already attained a substantial measure of adjustment with those in the world at large and any change in the rate would mean a difficult period of readjustment and involve widespread economic disturbance.

(2) In the matter of wages also, there has been a considerable amount of adjustment. Where wages are at present fixed too high, the reduction of the exchange rate to 1*s.* 4*d.* would at best provide a temporary alleviation only. Its effect would be, by inflating currency to the extent of 12½ per cent to produce a concealed reduction in wages of an equivalent percentage. Even if it does secure the desired equilibrium, which is highly improbable, it is not sound policy to use the currency as a lever to reduce real wages.

(3) As regards contracts, it is true that many of the current land revenue settlements were made when exchange was at 1*s.* 4*d.* but, in view of the great rise in prices since 1914, the real incidence of land revenue, measured in terms of commodities, has been very materially lightened. The great bulk of the contractual obligations incurred under modern conditions consist of short-term contracts and, so far as these are concerned, they originated for the most part when conditions were based on the 1*s.* 6*d.* rate or in any event after exchange had broken away from 1*s.* 4*d.*

(4) The economic effects to a reversion to 1*s.* 4*d.* would be serious, as prices and wages are not adjusted to that rate. It would produce a general rise of prices of 12½ per cent and the change would be severely felt by consumers generally, and especially by the poorer paid members of the literate classes. It would result in an arbitrary reduction of the real wages of labour, and its effect on foreign trade would be immediate and for a time convulsive.

(5) An important, but not decisive, factor is the effect of a reduction on public finances. It would lead to increases in both Central and Provincial taxation and would probably also result in a postponement of further remissions of the Provincial contributions, and a set-back to the development of nation-building projects in the Provinces. Further, the adverse effect on the budgetary equilibrium would necessarily impair the credit of India as regards borrowing.

(6) Another consideration, which again is not decisive, in view of the other recommendations made, is that if a rise in the price of silver should take place, the 1*s.* 6*d.* rate of exchange would provide a wider margin of safety than 1*s.* 4*d.*

(7) The opportunity for a reversion to the historic rate of 1*s.* 4*d.*, if it ever existed, is gone and the best interests of India as a whole now require that stability should be achieved without producing those disturbances which would be the inevitable consequence of adopting any rate but that which is current.

The arguments for reversion to the 1*s.*4*d* rate and the manner in which the Commission meet them are indicated below:—

(1) The 1*s.* 4*d.* rate has been described as the "natural rate" for the Rupee. There can, however, be no "natural" rate. If no action were taken to anchor the Rupee at a particular point, there would be extensive fluctuations amidst which it would be impossible to distinguish any particular rate as "natural".

(2) It is urged that the 1*s.* 6*d.* rate came into being through Government manipulation of the currency. The action of Government in intervening in April 1926 to prevent a fall of exchange below 1*s.* 5$\frac{29}{32}$*d.* was criticized, though no exception has been taken to the earlier action of the Government in October 1925 in intervening to prevent a rise in exchange to 1*s.* 6 3/16*d.* If either of these tendencies was natural, it was the earlier tendency to rise above the 1*s.* 6*d.* upper gold point. In any case, if it can be shown that prices and other conditions are in adjustment with those of the world at large on the basis of an existent exchange rate, the question of the means by which that rate came into existence is of no practical importance.

(3) It has been contended that a reduction in the rate would reduce the total demand for gold in connection with the introduction of a gold standard. This overlooks the fact that a reduction in the gold value of the monetary unit of 12½ per cent involves of necessity an increase of circulation by a similar percentage. The amount of gold in reserve required to support circulation would, therefore, be the same in either case.

(4) It has been pointed out that one must envisage the possibility of a failure of the monsoon requiring the utilization of the gold and sterling reserves of Government to support exchange, and that the rate of 1*s.* 4*d.* would be easier to maintain than 1*s.* 6*d.* But the testing time will come whatever the rate of stabilization and the ability to meet it will depend, not on the figure at which exchange is fixed, but on the maintenance and proper utilization of adequate gold reserves.

(5) It has been suggested that competition with

foreign countries with depreciated or depreciating currencies, such as France and Belgium, could be met by lowering Indian exchange to 1*s.* 4*d.* But this would apply during the transition period only and the remedy, if any, must be sought elsewhere than in the manipulation of India's currency policy.

(6) It has been maintained that the cheapness of gold leads to an abnormal absorption of gold by India and that a 1*s.* 4*d.* rate will be a wholesome check. India's appetite for gold cannot, however, be cured by lowering her exchange. The only sure way to eradicate this wasteful habit is to stabilize currency, establish confidence in its stability, educate people in the habit of investment, and extend banking facilities.

(7) Another argument for reduction in the rate is the possibility of a fall of world gold prices in the near future. But it must be assumed that the period of catastrophic disturbances is over, and that future movements of prices will proceed on more normal lines. If India suffers at all, she will suffer with the rest of the world, but it is a risk which she cannot escape if she adopts, and adheres to, a gold standard. Moreover, it is a risk to which she will be subject whatever the rate at which exchange is stabilized.

(8) A minor advantage claimed for the 1*s.* 4*d.* rate is that at that rate the sovereign is equivalent precisely to Rs. 15 whereas at 1*s.* 6*d.* the sovereign is equivalent to Rs. 13-5-4, a very inconvenient sum. This objection will lose much of its force if the legal tender character of the sovereign is removed.

(9) Broadly speaking, the arguments which have been brought forward to prove that reversion to 1*s.* 4*d.* would be beneficial, merely show that, during a period of adjustment of conditions to that rate, certain sections of the community (*e.g.*, debtors, exporters, and employers of labours) would be benefited at the expense of certain other sections (*e.g.*, creditors, importers and wage earners). They do not show that there would be any substantial permament benefit even to any section at the expense of another, still less to the country as a whole.

Miscellaneous Recommendations.

The Commission take the opportunity of making the following minor recommendations:—

(1) The stamp duty on bills of exchange and cheques should be abolished. Bilingual Bill forms should be on sale at post offices.

(2) Measures should be taken to promote the development of banking in India.

(3) Every effort should be made to remedy the deficiencies in the existing body of statistical data.

Mr. Thakurdas' Minute of Dissent.

In his Minute of Dissent, Sir Purshottamdas Thakurdas expresses his agreement with the gold bullion standard recommended by his colleagues subject to an unequivocal guarantee of non-interference with the inflow of gold into India except with due publicity and the concurrence of the Legislature. He does not appreciate the necessity of the recommendation to demonetise the sovereign, but, in view of the opinion held by his colleagues, he does not press his objection. The main points on which he differs from his colleagues are those relating to—

(1) the formation of a separate Reserve Bank of India, and

(2) the stabilization of the Rupee at 1*s.* 6*d.* gold.

As regards (1), while he fully appreciates the reasons which have induced his colleagues to propose the creation of a new central bank, and recognizes that this is perhaps the ideal system, he is of opinion that, in the special conditions of India, the ends in view will be better served by developing the Imperial Bank of India into a full-fledged central bank. As regards (2), his conclusions are generally at variance with those of his colleagues and he recommends the 1*s.* 4*d.* rate. He considers that the greater part of the general adjustment of prices to 1*s.* 6*d.* is still to come; no adjustment in wages has taken place, and none will hereafter without a struggle; until adjustment is complete, a 1*s.* 6*d.* ratio presents the foreign manufacturer with an effective though indirect bounty of 12½ per cent; a change to 1*s.* 6*d.* hits the large bulk of the debtor class to the benefit of the creditor class; any tampering with the standard of value is bound to have serious political effects in India and to cause distrust in its currency system and the financial administration of the country; the 1*s.* 4*d.* rate was recommended by the Fowler Committee as a "permanent rate", the Government and the people of India stand committed to the principles recommended by that Committee and the rate should not be changed except under absolute and unavoidable necessity; the question of the ratio is no less important than the question of the standard and the stabilization of the Rupee at 1*s.* 6*d.* will create a great disturbance in India's economic organization, especially if lean years arrive, in which case the steps taken to maintain exchange may deplete the gold resources of the country to an extent that may seriously shake the confidence of her people in the currency system; and, finally, the 1*s.* 4*d.* ratio stood for 20 years even during the American crisis, till 1917, and was only disturbed as a result of the War in common with the ratios of other countries in the world.

Criticism of Same.

As regards the Minute of Dissent, the members of the Commission other than Sir Purshottamdas Thakurdas have added a few paragraphs to the Report the substance of which is that they do not accept the historic retrospect in the Minute; that no useful purpose would be served by attempting to apportion praise or blame for what is past; that any such attempt would probably result in injustice, because currency theory and practice have undergone a steady process of evolution during the last quarter of a century, and it would be unfair in the light of later experience to condemn steps or decisions which were taken before that experience was acquired; that they do not regard the Government or the people of India as committed to the principles recommended by the Fowler Committee to any greater extent than they stand committed to the principles recommended by other committees which have been accepted and acted on; that they have held themselves free to make any recommendation which appeared to them to be desirable in the interests of India whether they agreed or did not agree with the principles previously accepted; that as regards the reversion to the 1*s.* 4*d.* rate suggested by Sir Purshottamdas Thakurdas, there is no argument advanced by him which did not receive their most careful consideration; that the accuracy and the completeness of the figures on which his arguments are based have not the authority of the Commission; and, finally, that the whole Minute contains many statements and inferences with which they have not thought it necessary or even relevant to deal but which they in no way accept.

Government of India's Press Communique.

The Secretary of State in Council and the Government of India have considered the important and

comprehensive report of the Royal Commission on Indian Currency and Finance which is published for general information to-day.

2. The Report deals with the following main topics:—(*a*) the establishment of a gold standard for India, (*b*) the creation of a Central Bank, its organization and responsibilities, (*c*) the ratio of the Rupee to gold and (*d*) the arrangements to be adopted during the period which must elapse before the Central Bank can be brought into being.

3. The Commission recognize that the projects comprising (*a*) and (*b*) require certain preparatory work and cannot be given effect to at once. Their recommendations on these heads demand careful study from Government and the public before questions of legislation can be taken up but it is necessary to indicate at once the Government's intentions as regards (*c*) and (*d*).

4. After full consideration of the Report and the Minute of Dissent annexed thereto, the Secretary of State in Council and the Government of India are satisfied that it is in the interests of India to adopt as the ratio of the Rupee to gold the rate of 1*s.* 6*d.* gold which is recommended in the Report.

5. The Report indicates the method by which this ratio should be established in the interim period prior to the transfer of responsibility for the control of the currency to a Central Bank. The Commission have recommended a procedure for linking the Rupee to gold by placing the currency authority under an obligation to buy gold and sell gold or gold exchange at its option at appropriate prices. With reference to the accepted gold parity of the Rupee, the Commission are further of opinion that the obligation to maintain the value of the currency at the parity established should be embodied in statutory form.

6. Recognizing the importance of establishing the stability of exchange on a statutory basis as soon as possible, the Government of India will lay proposals covering the matter referred to in the two immediately preceding paragraphs before the Legislature at the forthcoming session at Simla. Meanwhile, in order to remove any uncertainty, the Government of India announce, with the approval of the Secretary of State in Council, that they will take such steps as may be necessary to prevent any undue fluctuation in the exchange value of the rupee in order to confine the movements of exchange within the approximate upper and lower gold points as calculated on the basis of a 1*s.* 6*d.* gold rupee, *viz.*, 1*s.* 63/16*d.* and 1*s.* 5$\frac{1}{4}$*d.* respectively.

American Trade with India.

The following statistical matter is based on cable received from the Department of Commerce, Washington, D. C.:—

Exports and Imports.

Total exports from the United States, May 1926	$356,621,000
Total imports into the United States, May 1926	$321,029,000
Excess of exports over imports	$ 35,592,000

Trade with India.

Imports from India to the United States, May 1926	$ 12,195,000
Exports to India from the United States, May 1926	$ 3,885,000
Excess of imports over exports	$ 8,310,000

Some of the more important items *exported* from the United States to India during May, 1926, were as follows:—

Canned fruit	143,000	pounds.
Dyes	148,000	,,
Kerosene oil	5,424,000	gallons.
Lubricating oil	1,148,000	,,
Machinery, all kinds	$691,000	
Tinned sheets and plates	25,000	pounds.
Galvanized sheets and plates, iron and steel	1,995,000	pounds.
Tubes, pipes and fittings	5,712,000	,,
Bolts and nuts	79,000	,,
Automobiles (American)	272	
Automobiles (Canadian)	373	
Trucks (American)	111	
Trucks (Canadian)	312	

Note:—Total exports of automobiles from the United States during May were 22,120 and trucks 6,362. Total exports from Canada during May were 3,977 cars and 1,617 trucks.

Some of the more important items *imported* into the United States from India during May, 1926, were as follows:—

Burlaps	35,291,000	pounds.
Jute, raw	3,000	tons.
Cotton, raw	1,136,000	pounds.
Goatskins	3,362,000	,,
Shellac	2,722,000	,,
Mica	370,000	,,
Castor seed	8,571,000	,,
Manganese ore	4,000	tons.
Myrabolans	8,000	,,
Wool	80,000	pounds.

Trade with Ceylon

Imports to United States from Ceylon, May 1926	$4,241,000
Exports to Ceylon from the United States, May 1926	$ 286,000
Excess of imports over exports	$3,955,000

Exports from the United States to Ceylon included 64,000 gallons of lubricating oil, 108 automobiles and 64 trucks. Exports from Canada to Ceylon included 40 automobiles and 80 trucks.

Imports into the United States from Ceylon included 900,000 pounds of tea, 1,100,000 pounds of coconut products and 6,1[illegible]0,000 pounds of rubber.

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Detailed Contents.

	PAGE
THE MYSORE ECONOMIC CONFERENCE— *By the Editor*	369
PROFIT-SHARING IN CANADA— *By J. L. Charlesworth*	372
SHAW—HIS WORK FOR SOCIALISM— *By Emrys Hughes*	374
BOOKBINDING FOR THE TROPICS— *By Sir Arthur E. Shipley, G.B.E., F.R.S.*	377
COMPULSORY PRIMARY EDUCATION: A CALCUTTA SCHEME— *By Christopher Hay, M.A.*	379
FACTORIES IN BOMBAY IN 1925	385
THE HOUSE OF MITSUI—AN OBJECT LESSON TO INDIANS— *By Cornelius Burford*	386
ECONOMIC NOTES FROM LONDON	387
SESQUI-CENTENNIAL INTERNATIONAL EXPOSITION	390
INDIAN ECONOMIC NOTES	392
TOPICS IN THE JOURNALS	394
AMERICAN TRADE WITH INDIA	401
BOOKS IN BRIEF—	
An Economic History of England, 1066—1874	402
Money and the Money Market in India	402
The Empire Commercial Guide	402
International Law in Ancient India	402
OTHER NOTES—	
Aid to Industries in Germany	371
ADVERTISEMENTS—	

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Mr Natesan, who was made a "Rao Bahadur" not long ago, has a record of useful work to his credit He was among the first to leave the beaten track of Government service and start as a business man. He has been a successful journalist and publisher. His splendid work for South African Indians is too well known to need mention. He has circulated several lakhs of copies of a Two Anna Edition of Mrs. Besant's translation of the *Bhagavad Gita*—a perfect triumph in the publication field. He was until recently a Member of the Council of State.

The Mysore Economic Journal

A Monthly Periodical devoted to the Discussion
of all Economic Topics of Interest

Vol. XII SEPTEMBER 1926 No. 9

The Mysore Economic Conference.

By the Editor.

The speech that Mr. Mirza Mahomed Ismail, Dewan of Mysore, made in declaring open the last session of the Mysore Economic Conference, is a welcome one. If it does not break new ground, it at least has turned searchlight inward. Progress is possible *now*, for though the Conference was reconstituted a couple of years ago, it has been active only in an academic sense during the past year. The Boards have, from the Reports read at the Conference, done useful work but their scope for usefulness has still to be widened. If their work is to prove helpful in a practical sense, they should aim at practical results. And practical results can only be achieved by *localizing* the work that is, making the people of the particular area concerned take an earnest interest in it. The spread of education, for instance, depends less on centralization, and more on localization. The same remark applies, in a more intensified sense, to the development of locally possible industries and to agriculture. Work of this nature can only be done by systematic application through a well recognized agency. The suggested revival of the post of the Economic Superintendent is, therefore, one which, we think, will meet with general approbation. The abolition of this post, some years ago, was a retrograde step. If, apart from the financial cause assigned, anything could effectually kill the movement for development in the State, it was this one. Whatever may have been his faults, the Economic Superintendent helped to create the necessary enthusiasm in the areas he had charge of and what is more, co-ordinated the work in them. He guided the people in matters affecting their welfare and helped in the realization of the objects, small and great. Being charged with the duty, he felt himself responsible for the economic well-being of the people. He was of material assistance in drawing attention to the felt wants of an area; of cataloguing possible local industries; and bringing the local leaders with the local governing agencies. Work of this important kind—work requiring necessary ability, tact and occasionally at least some measure of enthusiasm, could not wholly be left to take care of itself. The resuscitation of this agency is, therefore, in the right direction and augurs well for the future.

Whether the new Economic Superintendents should be under the control of Deputy Commissioners or District Boards is a matter of detail. The District Boards Act makes provision for development work being in the hands of the Boards. No difficulty whatever can arise where the Deputy Commissioner is both the District head and the President of the District Board. In those districts in which there are non-official Presidents, it will be, in our opinion, only a question of the careful selection of the personnel and no more. The person chosen for the post of Economic Superintendent in every District in which there is a non-official President, should be one who has already won his spurs elsewhere and is known to be a suitable man from every point of view for the post. A non-official of some standing may, perhaps, solve the problem, for he might become *persona grata* with both the District head and the District Board President. This question cannot, in any case, prove beyond the wit of man to solve. We incline to the belief that too much has been made in certain quarters of alleged inherent

difficulties. Where there is a will, surely there will be found, easily enough, a way.

The other suggestions of the Dewan are equally imperatively called for if the resuscitated Conference is to function on fruitful lines. Without a separate Secretary, co-ordination of the work of the Central Boards and the District would not be achieved; and with this lack of co-ordination at the top, it would be altogether impossible to achieve any definite results. Critics in olden days thought the post, much like that of the Economic Superintendent, a superfluity and voted for its abolition. But the results proved wholly disastrous. Hard worked Secretariat officials cannot be expected to shoulder additional work of this nature, requiring a great deal of close attention to detail without forgetting the policy underlying all development work, and a greater deal of travel to keep touch with the progress of the movement in the districts. The Economic Secretary's work is about the most important in the whole programme of development work and he must be one blessed with the faculty of thinking out problems for himself as much as giving effect to what has been settled as the result of deliberations in Committees and Conferences. In view of the fact that the whole movement should be—as it is daily being better recognized in the case of the Department of Co-operation, for instance—non-officialized as much as possible, the idea of appointing a suitable non-official may, in our opinion, be also considered on the present occasion. There is a double object to be gained by a favourable consideration of this idea. First, the ideal of making the movement wholly non-official and rendering it less and less a department of Government, as it had a tendency to become in the past, will be set up for the people. Secondly, the requisite non-official agency will gradually be organized for the satisfactory working of the movement which is a *sine qua non* if it is to strike root in the soil. The chief defect before Departmental agencies is that they tend to perpetuate themselves, in the sense that they render impossible their displacement, even when such displacement is a necessity. This has become so largely in the case of the Co-operative Department in India and it is daily being realized now that this tendency in that Department should be checked. Steps are being taken to do this in that Department to obviate further difficulties. That holds out a salutary lesson to us. The error should not be repeated in the case of the Conference. The inanity that overtook it, immediately the Government withdrew its hands from it some five or six years ago, shows the difficulty of de-departmentalizing a departmentalized institution. The idea of yoking officials and non-officials together and influencing the one by the other is an excellent one but the limits within which this should be done should be strictly laid down; otherwise, in the process the non-official is bound to be assimilated, if not altogether, by the official. The working of the Conference in olden days had this fatal flaw in it and we should see to it that from the start the revived Conference is free from it.

The resuscitation of the Standing Committee and the direct connection that is sought to be established between the central organization and the Boards is in keeping with the revised plan of operations and ought to appeal to all those who have realized the necessity for constantly reviewing the work done or in progress. Unless a businesslike interest is taken in the work of the Conference it would be wholly infructuous to spend any additional grants on the Conference. The Conference should not be treated as a week's show at the end of the year; it should be a working organization, with a careful programme of work for the whole year, which programme it should be its primary duty to see carried out throughout the twelve months for which it has been prepared. The Standing Committee should, in the revised plan of operations, be the authority to check the progress of the work achieved by the District Economic Superintendents and the District Boards or Committees as the case may be. The spirit underlying its work should be one of friendly help and sympathetic attention towards what might be required by those *directly* charged with the carrying out of the work in the unit areas—from the village to the district. The object of the revised Conference should, throughout, be to *achieve results* and not merely go about talking of economic well-being, though such propaganda is undeniably useful to give a finish to an undertaking of this nature. To achieve definite results, definiteness in aims and objects is undoubtedly necessary and this will largely depend on knowing what is required to be done and what facilities there are for doing it. Also, what financial and other necessary aid may be forthcoming for the work. From this point of view it is satisfactory that Government are agreeable to give special grants for the purpose. In this connec-

tion, we would suggest that the line of demarkation between the Departments and the Development Boards should be laid down in fairly intelligible terms, so that all over-lapping may be avoided. Not only that, steps should be taken to see that there is no unhealthy rivalry between them in regard to the carrying out of proposed schemes. In the past this sort of rivalry led to avoidable results and there should, in our opinion, be no scope of such undesirable consequences. It would be a satisfactory rule if what Departments could and should do are ruled out as taboo to the Development Boards and *vice versa*. There may be experimental work that might well fall within the limits of action prescribed for a recognized Department, and if that is so, it should not be shifted on to the shoulders of the relative Development Board. Our point is that the work of the Board should be strictly limited by definite rules and the money allotted for them should be spent on the objects for which they are to be made responsible. This is not only necessary in the interests of the Boards and the Departments concerned, but in the interests of sound finance as well.

We have left ourselves little space for the first of the objectives aimed at by the Dewan in reorganizing the Conference. A survey of resources and of production in the State is a *sine qua non* and unless such a survey is conducted on recognized lines, the work of the Conference would be hampered. The district, the taluk and the village figures should be collected—on the basis of the *actuals* of the past ten years and for each a limit to be aimed at during each year should be worked out and presented. The necessary help should be given on recognized lines and increased production made possible in each successive unit area. That is how progress has been made possible in Western countries. Such a survey will incidentally render much desired statistics of a reliable kind available. A special staff may have to be provided for carrying out the initial work. That should not stand in the way of the work being taken up. Necessary expenditure, on a moderate scale, need not and would not be objected to, especially in a matter of this nature. A district staff and some headquarters staff may also be required on a permanent basis for collecting the statistics and issuing it in a suitable form. This is a sphere of work that every modern Government accepts as part of its function and if properly put to the public is certain to be accepted by them as a necessary charge.

The Dewan has, in our opinion, started well with the Conference. It is to be hoped that the Committee that has been appointed will submit a Report which, in every way, will commend itself to the public and to the Government. There will doubtless be some who will say, as some did say in the olden days, that the Government should leave all economic activities to individual effort and that the resuscitation of the Conference is, on anything like the old lines, unnecessary. All that we can say to such critics is that they mistake the true functions of the State in the domain of economic development. The State is, they should remember, the greatest of human institutions—that from which proceed all others, in so far as they are based upon or modifiable by law. As Hawtrey puts it :-

"The State is itself a part of the solution of the economic problem. For it is an instrument for regulating and directing human effort. Some of its activities are not what is ordinarily called economic. But there is nothing in our definition of the economic problem.....to exclude them. And a very large part of what the State does is, of course, admittedly economic in the accepted sense."

Aid to Industries in Germany.

The following extract from an American paper gives some idea of what the German Government is doing to promote German industries and to solve the problem of unemployment :—

The Government will become the greatest employer and producer in Europe by the distribution of credits to all industries it considers worthy of Government support.

The Government will advance $25,000,000 to the German railroads to enable them to place orders for material needed for repairs and renovations of lines and equipment. A further $75,000,000 is entrusted to industry for the production of tools and equipment for the Russian market, which is paying slowly but is expected to develop in the near future. The Russians already have made good on their 1925 transactions with Germany.

The Government plan includes protective measure for the mining interests. Business men believe that this indicates Government support of the new efforts made by the Ruhr-coal barons to develop sales in America.

Profit-Sharing in Canada.

By J. L. Charlesworth.

A problem which has arisen in a great many industries is that of making provision for employees in their old age. Most manufacturers now recognize that something is due to the man who has faithfully served his employer throughout most of his working life, over and above the wages he has received in that period. To make sure that the faithful employee does not suffer during the period between the time when his earning power is over and the time of his death is one phase of the problem. To provide for the dependants of the employee who dies while in service is another. And a third is the feeling that an employee who has his future assured will be more contented and hence more efficient in the present.

When the recent reorganization took place in Christie Brown & Co., Limited, biscuit manufacturers, Toronto, this question was one of the first considered by the new management. The old company had treated their employees well, both in the matter of wages and in working conditions. They also had retired several old employees on half pay. The new company, although under no legal obligation to do so, have continued these pensions. The management felt, however, that such a system, while it had worked well in the past, was not entirely flawless. It left the way open for an employee to be harmed by personal prejudices and again, being quite voluntary on the part of the Company, it did not give the men that assurance for the future which is so desirable in any employee benefit plan. The new management decided to institute a plan which should not only provide for employees all that they might expect under the old system but should work with machine-like precision. They considered several employee benefit plans in force with other companies and finally adopted and announced to their employees on January 1, an employees' savings and profit-sharing fund, which has been successful elsewhere and is pronounced by authorities to be actuarially sound. Within less than a month after its adoption more than 80 per cent of those eligible to participate in it had signed up.

Purpose of the Plan.

The intention of the plan is fourfold: first, to afford all employees a share in the profits of the business and to enable them by savings to provide a substantial fund for their future; secondly, to provide a method for the company to add a portion of their profits to the savings of employees; thirdly, to provide that all those who steadily participate in the fund and remain in the employ of the company until they retire from active business life, shall have an important contribution to future maintenance, and that all those who achieve a long service record, but who may not remain with the company all their business life, shall have accumulated a substantial sum; and fourthly, to assist in the provision for the family of any employee who dies while in the company's employ.

The plan adopted gives every employee of Christie Brown & Co., Limited, who has seen a year or more of service there, the opportunity of sharing in the net profits of the business. The company will contribute annually a sum equal to five per cent of their net profits for the year and this will be distributed among the participating employees in proportion to the contribution they themselves make.

Participation on the part of the employees is entirely voluntary. Each employee wishing to participate signs an "employee's acceptance" by which he agrees to deposit or cause to be deposited in the fund five per cent of his wages, provided that such deposits do not aggregate more than $104.00 in any one year, in which case no further deposits shall be made in that year. The Board of Trustees administering the fund have the power to fix an amount to be contributed by any employee who is paid on a percentage or commission basis, provided always that the amount so fixed does not exceed $104 a year.

The reason for limiting the possible deposits of employees is to ensure that the more highly paid employees do not share unduly in the company's contribution and the profits of the fund. Five per cent of wages received, or $104 a year, whichever is less, has accordingly been fixed as the maximum amount which any employee may deposit.

At the end of each fiscal year, when the company's books have been audited, provision is to be made first for interest and sinking fund, depreciation, preferred dividends and reserves for taxes, bad and doubtful debts, etc. The remainder of the company's earnings

are to be considered as the net profits, five per cent of which goes to the fund.

Recognition of Long Service.

Since one of the main ideas in instituting the plan is to provide a tangible recognition of and an inducement to long service, the benefits from the company's contribution are arranged to accrue to those who continue to participate in the plan rather than to those who withdraw from it. An employee who has completed ten years of continuous service with the company, including nine years as a depositor in the fund, may withdraw his full balance, including both his own and the company's contribution, at any time on notice to the Board of Trustees. An employee who has less than ten years' service to his credit may withdraw from the fund only the amount he has himself contributed, with interest at five per cent, compounded semi-annually. The balance to his credit reverts to the fund and is part of the fund's profits for that year.

An exception to this rule is made in the case of women employees. Any woman participating employee who, after five years' continuous service with the company, including two years as a depositor, leaves to be married, may withdraw the full balance to her credit.

In the event of the death of a participating employee the full balance to his credit at the time will be paid to the beneficiaries designated by him or to his estate if no beneficiaries have been named.

An employee automatically withdraws from the fund on leaving the company's service or upon failing to make deposits regularly. Anyone who has once withdrawn cannot again become eligible to participate without the consent of the Board of Trustees.

Trustees have Wide Discretion.

While the general rules governing the fund are properly strict, the Board of Trustees has the power to make exceptions in consideration of the circumstances of any particular case, such as waiving any default in making deposits, reinstating employees who have withdrawn from the fund, etc. The members of the board are appointed by the directorate of the company and consist of three officers or directors and two employees who are not officers or directors. The fund is vested in and managed by this board, who have full discretion with regard to the investment of all money and power to adopt further rules to assist the working of the plan. No change in the general nature of the plan, however, may be made without the ratification of a majority of the participating employees. The board may invest up to 40 per cent of the total amount of the fund in shares of the company. The trustees serve without remuneration and the company bears all expenses of operating and managing the fund.

It is, of course, not yet known what amount employees will actually receive from the company, but the company believe that their contribution of five per cent of net profits will be sufficient to double the deposits of employees. The following table, based on deposits of the maximum amount of $2.00 a week shows how great an incentive to thrift and faithful service Christie Brown & Co. re offering their workers:-

Year	Employees' Contribution $	Company's Contribution $	Total $	Cumulative $	Interest $	Total $
1	104	104	208	208.00	2.60	210.60
2	104	104	208	418.60	13.25	431.85
3	104	104	208	639.85	24.45	664 30
4	104	104	208	872.30	36.22	908.52
5	104	104	208	1,116 52	48.59	1,165 11
6	104	104	208	1,373.11	61 57	1,434.68
7	104	104	208	1,642.68	75.22	1,717.90
8	104	104	208	1,925.90	89.56	2,015.46
9	104	104	208	2,223.46	104.62	2,328.08
10	104	104	208	2,536.08	120.45	2,656.53
11	104	104	208	2,864 53	137.08	3,001.61
12	104	104	208	3,209.61	154.55	3,364.16
13	104	104	208	3,572.16	172.90	3,745.06
14	104	104	208	3,953.06	192.18	4,145 24
15	104	104	208	4,353.24	212.45	4,565.69
16	104	104	208	4,773.69	233.73	5,007.42
17	104	104	208	5,215.42	256 09	5,471.51
18	104	104	208	5,679.51	279.58	5,959.09
19	104	104	208	6,167.09	304.27	6,471.36
20	104	104	208	6,679.36	330.20	7,009,56
21	104	104	208	7,217.56	357.44	7,575.00
22	104	104	208	7,783.00	386 07	8,169.07
23	104	104	208	8,377.07	416.15	8,793.22
24	104	104	208	9,001.22	447.75	9,448.97
25	104	104	208	9,656.97	480 94	10,137.91
26	104	104	208	10,345.91	515.82	10,861.73
27	104	104	208	11,069.73	552.47	11,622.20
28	104	104	208	11,880.20	590.96	12,421.16
29	104	104	208	12.629.16	631.41	13,260.57
30	104	104	208	13,468.57	673.91	14,142.48

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A revolutionist is simply an idealist wedded to despair.—*Canon Donaldson.*

Most of us would be better for being rationed and exercised as a racehorse is rationed and exercised.—*Prof. Leonard Hill.*

It should be an article of faith with every Anglo-Indian to treat the Indian as his equal and not as an inferior.—*Colonel Gidney.*

Shaw—His Work for Socialism.

By Emrys Hughes.

Most of the papers that published articles on Bernard Shaw's birthday did their best to hide the fact Shaw was a Socialist—one of the most fanatical Socialists of his time. They had plenty to say about Shaw as an artist and a dramatist, but precious little about Shaw the Socialist propagandist and pamphleteer. J. L. Garvin, for example, succeeded in writing a two column appreciation in the 'Observer', which any comfortable, well-fed Tory in a West-End club could have read without guessing that he was reading a tribute to the arch-enemy of present-day society—one who has given his life to proclaiming on the housetops that it is Socialism and Socialism alone that can save us, and that the "person who is not a Socialist is a fool".

That sort of thing might be good enough for the fashionable literary coteries, but it was not good enough for Shaw. And it is characteristic of the man that he used the occasion of his seventieth birthday dinner in the House of Commons as a Socialist propaganda platform from which to deliver to the world a first-class Socialist speech, and to once more put forward the arguments for Socialism that he has been using effectively for the last forty years.

"I don't give a 'snap' of my fingers for my literary eminence," he said. "Karl Marx made a man of me. Socialism made a man of me. Look at the rest of the literary people and you will understand why I am inordinately proud of being a Socialist."

The Economics of Luxury.

It is customary nowadays to regard the Fabian Society as completely out of date, and in the more exclusive revolutionary circles a member of the Fabian Society is looked upon as perhaps a little less of a reactionary than a Conservative working man. There may be something to be said for this point of view, although most of those who hold it have never read the Fabian Essays or realize how they paved the way for Socialist thought a generation ago.

Shaw, as is well known, edited them and contributed two sparkling essays laying down the fundamentals of the Socialist faith.

Seldom if ever has the case for Socialism been put so unanswerably as Shaw put it in his introductory essay. Here is his analysis of "wealth" and "illth":—

"It is sometimes said that during this grotesquely hideous march of civilization from bad to worse, wealth is increasing side by side with misery. Such a thing is eternally impossible: wealth is steadily decreasing with the spread of poverty. But riches are increasing, which is quite another thing. The total of the exchange values produced in the country annually is mounting perhaps by leaps and bounds. But the accumulation of riches, and consequently of an excessive purchasing power, in the hands of a class, soon satiates that class with socially useful wealth, and sets them offering a price for luxuries. The moment a price is to be had for a luxury, it acquires change value, and labour is employed to produce it. A New York lady, for instance, having a nature of exquisite sensibility, orders an elegant rosewood and silver coffin, upholstered in pink satin, for her dead dog. It is made, and meanwhile a live child is prowling barefooted and hunger-stunted in the frozen gutter outside. The exchange value of the coffin is counted as part of the national wealth; but a nation which cannot afford food and clothing for its children cannot be allowed to pass as wealthy because it has provided a pretty coffin for a dead dog. Exchange value itself, in fact, has become bedeviled like everything else, and represents no longer utility, but the cravings of lust, folly, vanity, gluttony, and madness, technically described by genteel economists as 'effective demand'. With all its energy, its smilesian 'self-help', its merchant-princely enterprise, its ferocious sweating and slave-driving, its prodigality of blood, sweat and tears, what has it heaped up, over and above the pittance of its slaves? Only a monstrous pile of frippery, some tainted class literature and class art, and not a little poison and mischief."

Shaw's Controversies.

As a controversialist, there is nobody alive a match for Shaw. Since the early days when he pulverized W. H. Mallock in a scathing little pamphlet "Socialism and Superior Brains," he has taken on everybody that was worth his while and has wiped them off the face of the earth. Shaw's earlier articles to the 'Saturday Review' have already been published in book form "Dramatic Opinions and Essays", but a compilation of his later articles

and letters to the 'Daily News', the 'Manchester Guardian', the 'Nation', and other papers have yet to be published. They would make a tremendously interesting volume. There is no doubt Shaw has a knack of saying the right thing in the most provocative way possible. One of the most brilliant newspaper articles he ever wrote was one in the 'Daily News' on the sinking of the Titanic, which led to a lively controversy with Sir Arthur Conan Doyle, in which Conan Doyle took the count.

Shaw was sickened with the wholesale publication of American exaggeration which flooded the press after the tragedy.

"The tragedy of the Titanic", he wrote, "has been characterized not by sympathy with the bereaved, but by an outburst of sheer, wicked, outrageous, romantic lying."

He went on to pour scorn on the accounts which had described the ship going down while the band played "Nearer My God to Thee" to the accompaniment of the first mate telling Mr. Bruce Ismay (one of the directors of the company) to go to hell.

And then he went on to point out how the first class passengers had the first places in the lifeboats, and how money counted in the face of death.

In the Pulpit.

Shaw's speeches might also be republished. I once heard him deliver an eloquent Socialist speech in support of Keir Hardie's candidature in the General Election of 1910. It would be worth while reprinting it if a verbatim report is in existence. On one occasion too it is recorded that Shaw preached from a pulpit. It was a mid-day service in the City Temple where Shaw had been invited by Rev. R. J. Campbell during the New Theology controversy. Shaw more than delivered the goods, and succeeded in scandalizing the fashionable congregation that had gathered to listen to him. He told a story about a well-to-do friend of his who had died and had been taken to heaven. At the gate he met Peter and the other angels, and expressed a desire to see God. So they led him to "a sort of cathedral place where a melancholy old man sat among the clouds". He was going up to speak to him when Peter touched him gently on the shoulder and whispered, "we have granted you your wish to see God, but we cannot let you speak to him because—between ourselves- God has gone mad."

Socialism on the Stage.

That took the congregation's breath away. "Yes that is what is wrong with the world", said Shaw, "the God within us has gone mad."

The stock complaint against Shaw of course is that there is too much argufying in his plays. But the arguments in the plays are the best part of them. Shaw meant it to be so. He deliberately set out to use the stage as a place for preaching his social ideals and to make conventional middle class life under Capitalism look silly. He uses the stage as other people use the press, and the pulpit, and in case thick-headed people are likely to misunderstand what he is after, writes short treatises as prefaces in order to drive the lesson home. Nearly every one of these treatises is a good sized booklet in itself.

In "Widowers' Houses" he exposes the pleasant middle class life which flourishes on the squalor and miseries of slumdom and slums. That it is not only the rack-renter that is to blame, but that the whole of comfortable Society is responsible. In "Mrs. Warner's Profession" he discusses the problem of prostitution and shows that it has its roots in the poverty problem, that its cause is an economic one. In the "Doctor's Dilemma" he deals with the medical profession as a private enterprise institution and shows up a good deal of the medical superstition that is passed off on the gullible public as science. Shaw has rarely been in better form than in the preface to the "Doctor's Dilemma", where he argues in favour of municipalizing and nationalizing the medical service in the interests of the community.

Doctors under Private Enterprise.

Here is a part of his indictment of the doctors:—

"Again I hear voices indignantly mutter old phrases about the high character of a noble profession and the honour and conscience of its members. I must reply that the medical profession has not a high character: it has an infamous character. I do not know a single thoughtful and well-formed person who does not feel that the tragedy of illness at present is that it delivers you helplessly into the hands of a profession which you deeply mistrust, because it not only advocates and practises the most revolting cruelties in the pursuit of knowledge, and justifies them on grounds which would equally justify practising the same cruelties on yourself or your children or burning down London to test a patent fire extinguisher, but, when it has shocked the public, tries to reassure it with lies of

breath-bereaving brazeness. That is the character the medical profession has got just now. It may be deserved or it may not: there it is at all events; and the doctors who have not realized this are living in a fool's paradise. As to the honour and conscience of doctors, they have as much as any other class of men, no more and no less. It is simply unscientific to allege or believe that doctors do not under existing circumstances perform unnecessary operations and manufacture and prolong lucrative illnesses. The only ones who can claim to be above suspicion are those who are so much sought after that their cured patients are immediately replaced by fresh ones. And there is this curious psychological fact to be remembered: a serious illness or a death advertizes the doctor exactly as a hanging advertises the barrister who defended the person hanged. Suppose for example, a royal personage gets something wrong with his throat, or a pain in his inside. If a doctor effects some trumpery cure with a wet compress or a peppermint lozenge nobody takes the least notice of him. But if he operates on the throat and kills the patient, or extirpates an internal organ and keeps the whole nation palpitating for days whilst the patient hovers in pain and fever between life and death, his fortune is made: every rich man who omits to call him in when the same symptoms appear in his household is held not to have done his utmost duty to the patient. The wonder is that there is a king or queen left alive in Europe."

Under Capitalism Shaw proves the doctors are just as much frauds, no more and no less, as the teachers, the preachers, the lawyers, and the journalists. Only by making the medical profession a public service can we remedy matters.

Cowardice of the Soldier.

Most other dramatists have glorified the soldier and the soldier's job. It has been left to Shaw to ridicule the soldier and to make the soldier look ridiculous.

It is said that the late King Edward absolutely refused to smile, and ultimately left the theatre as a protest when "Arms and the Man" was first performed in London. The cowardice of the soldier has more than once been his theme.

"Get rid of the great nation", he said in his speech in London this week. Shaw has no illusions as to what makes a great nation.

Here is his description of the soldier in the preface to "John Bull's Other Island":—

"The soldier is an anachronism of which we must get rid. Among people who are proof against the suggestions of romantic fiction there can no longer be any question of the fact that military service produces moral imbecility, ferocity, and cowardice, and that the defence of nations must be undertaken by the civil enterprise of men enjoying all the rights and liberties of citizenship, and trained by the exacting discipline of democratic freedom and responsibility. For permanent work the soldier is worse than useless: such efficiency as he has is the result of dehumanization and disablement. His whole training tends to make him a weakling. He has the easiest of lives; he has no freedom and responsibility. He is politically and socially a child, with rations instead of rights, treated like a child, punished like a child, dressed prettily and washed and combed like a child, excused for outbreaks of naughtiness like a child, forbidden to marry like a child, and called Tommy like a child. He has no real work to keep him from going mad except housemaid's work: all the rest is forced exercise, in the form of endless rehearsals for a destructive and terrifying performance which may never come off, and which, when it does come off, is not like the rehearsals."

Shaw's Irony.

And what withering irony there was in his description of the execution of the Denshawai Natives by Lord Cromer's Government in Egypt:

"Hanging, however, is the least sensational form of public execution: it lacks those elements of blood and torture for which the military and bureaucratic imagination lusts. So, as they had only room for one man on the gallows, and had to leave him hanging half an hour to make sure work and give his family plenty of time to watch him swinging ("slowly turning round and round on himself," as the local papers describe it), thus having two hours to kill as well as four men, they kept the entertainment going by flogging eight men with fifty lashes each: eleven more than the utmost permitted by the law of Moses in times which our Army of Occupation no doubt considers barbarous. But then Moses conceived his law of God, and not simply an instrument for the gratification of his own cruelty and terror. It is unspeakably reassuring to learn from the British official reports laid before Parliament that 'due dignity was observed in carrying out the executions,' that 'all possible humanity was shewn in carrying

them out,' and that 'the arrangements were admirable, and reflect great credit on all concerned'. As this last testimonial apparently does not refer to the victims, they are evidently officially considered not to have been concerned in the proceedings at all. Finally, Lord Cromer verifies that the Englishman in charge of the proceedings is 'a singularly humane man, and is very popular amongst the natives of Egypt by reason of the great sympathy he has always shewn for them' It will be seen that Parliamentary Papers, Nos. 3 and 4, Egypt, 1906, are not lacking in unconscious humour. The social walrus pledges himself in every case for the kindliness of the official carpenter."

Shaw doesn't hesitate to tell us that British Empire has been built up on incidents like that.

OUR GREATEST CRITIC.

It is remarkable that far more attention has been given to the fact that he has reached 70, in Germany than in this country. While the British Government prohibited his birthday speech to be broadcast, Germany celebrated the occasion by a special broadcast lecture on his work by Maximilian Harding, the famous German Publicist.

There is no doubt that future generations will turn back to the writings of Bernard Shaw and look upon him as the greater Socialist critic of the 20th century. His plays will live as works of art and as great drama.

But whether his plays live or not, his polemical writing, his Socialist pamphleteering, his merciless exposure of the rottenness of the social life we call Capitalism, the withering scorn he has poured upon its institutions, its shame, its hypocrisies, its insincereties will long be read as the protests of a great genius who saw things clearer than most of his contemporaries.

Shaw is 70. But judging by his speech this week he is very young yet. May he live long to continue his good work.

Bookbinding for the Tropics.

By Sir Arthur E. Shipley, G.B.E., F.R.S.

Since I wrote an article on "Enemies of Books" in the October and November (1925) numbers of *Tropical Agriculture*, I have accumulated a certain number of further facts as to the treatment of books in the Tropics. Dr. T. E. Snyder, Entomologist in the Bureau of Entomology, United States Department of Agriculture, has been good enough to send me the following paragraphs which are of considerable value in dealing with this difficult problem.

In 1908 a joint commission of the Bureau of Standards and the Library of Congress issued a Memorandum in regard to certain experiments conducted by the Bureau of Standards, entitled, "Memoranda Relating to the Binding of Publications for Distribution to State and Territorial Libraries and Designated Depositories". This Memorandum was published in 1908 by the Joint Committee on Printing giving the recommendations based on the results of these experiments. Certain binding materials were found to be superior to others. The results of the experiments with poisons are also to be found in this memorandum which was published unnumbered. It may be stated with reference to these results that they are by no means conclusive.

One of the principal types of serious insect injury to books and paper in the Tropics is that caused by termites or "white ants". These insects usually infest books and paper when they are piled on modern shelving, in wooden book cases, or on flooring. Hence, injury by them is secondary to the injury to the woodwork.

There are various references in entomological literature to solutions for preserving books in the Tropics from attack by insects. The following is said to be effective :—

1 oz. corrosive sublimate, 1 oz. carbolic acid, 2 pts. methylated or white rum spirit.

This solution should be lightly painted on both the outside and inside covers, especially along the margin and backs where paste has been used. It is reported to be effective in Jamaica for any kind of book cover and after the mixture has dried the books may be handled with perfect safety. Bookbinders in the Tropics are recommended to use a paste poison by adding one-half ounce of copper sulphate or bluestone to every pound of paste.

It is reported that in Porto Rico protection for a year or more can be obtained by painting the books and covers inside and out with the following solution :-

1 oz. corrosive sublimate, 1 oz. carbolic acid, 1 qt. alcohol.

The books should not be handled until they are thoroughly dry.

In Cuba it is reported that books brushed lightly over the covers with 1,000 cc. methylated spirit, 20 grms. bichloride of mercury, 25 cc. phenic acid, adding sufficient shellac to produce a slightly adhesive liquid is an effective preservative against insect attack.

A strong solution of shellac in spirit has also been recommended for use in other tropical countries. A solution of corrosive sublimate and thymol is reported to be an effective preservative as is also the addition of alum to the paste.

The Bureau of Entomology has experimented with various poisons which are to be added in the manufacture of various wood pulp products, such as the various composition wood fibre boards. Crude carbolic acid at the rate of one gallon per thousand square feet has proved effective in preventing attack by termites. Bichloride of mercury at the rate of 0.049 ounces per square foot has proved effective against these insects. Copper sulphate at the rate of 0.113 ounces per square foot has proved effective against termites. Additional experiments are being conducted with sodium fluoride, chlorinated naphthalene and dead oil or coal tar creosote. This Bureau's results with the latter substances are not as yet conclusive.

We would suggest that it may be found advisable to use binders made of asbestos as covers for books and paper in the Tropics and that these be bound together by metal - either spring or clips. If this is not practicable, we suggest that you use covers made of a wood fibre board treated with a chemical preservative, following the suggestions as outlined above.

I have also heard from Mr. Frank Cundall of the Institute of Jamaica to the following effect :

"With regard to Mr. Dunlop's experience that French and German bound books are absolutely immune, it may interest you to know that in the binding of books for the Institute of Jamaica the preparation referred to by Dr. Thorpe has been in use for upwards of thirty-five years. It was efficacious until recently. When I complained to the Institute's Agents they sent me the astounding reply from the binders that whereas before the War they obtained their ingredients from Germany they had since obtained them in England, and they could only assume that they were less efficacious."

He further informs me that he is preparing a memorandum for the next issue of the *Handbook of Jamaica* on the "Preservation of Books in the Tropics" which will undoubtedly be of great value.

Finally, Mr. Cedric Chivers read a most able and helpful paper before the Royal Society of Arts on 22nd April of last year. Mr. Emery Walker, F.S.A., who was in the chair introduced Mr. Chivers as the most important binder outside London and a binder who had more to do with library binding than anyone else in the trade. Mr. Chivers does not deal with binding for the Tropics but his paper is full of interest. He has investigated all the qualities of papers used in binding, and it is sad to reflect that these have been steadily deteriorating. He has experimented with the tearing strain of papers and has made many improvements in the actual method of binding. These are fully illustrated in the *Journal of the Royal Society*.

Some of the results regarding the actual binding are most surprising, and one fact becomes quite evident that Nigerian leather is in every respect (with the solitary exception of vellum) the most capable of resisting the strain of various usages. The high value which is shewn by the Niger leathers is not a little surprising, when it is remembered that these leathers have been tanned by the natives of Nigeria. The Nigerian tanner, in his so-called ignorance, has been working along the lines of least resistance, allowing atmospheric conditions, temperature and time to operate, with results which give a more satisfactory result than can be obtained under civilized conditions. Further, severe tests under extreme conditions of heat, dryness and moisture have demonstrated that the native tanning of Nigerian leather more effectually preserves it from injury under bad conditions than any European tanning. Under conditions in which vellum comes out first as having the highest resistance to tearing strain, but after that Nigerian unpared comes second, Nigerian sheepskins third, Nigerian goatskins fourth, pared Nigerian leather fifth, soft Nigerian leather sixth. Pigskin comes twelfth, cow-hide and calf-hide come eighteenth. There is no doubt that civilization has much to answer for—at any rate in the preparation of leathers used for bookbinding.

Cow-hide and Calf	lost 99%	of its original strength.
French Levant Morocco	,, 87%	do.
Persian hard grain Morocco	,, 83%	do.
Thin Pigskin	,, 75%	do.
Morocco	,, 70%	do.
Thick Calf	,, 50%	do.
Thick Hogskin	,, 27%	do.
Niger leather	,, 12%	do.

Compulsory Primary Education: A Calcutta Scheme.

By Christopher Hay, M.A.

The Education Officer of the Calcutta Corporation has prepared a Scheme for the successful working out of Compulsory Primary Education within the limits of that City. In view of the transfer of Primary Education in the cities to the Corporations or Municipalities concerned, there is considerable interest attaching to the scheme proposed by the Education Officer of the Calcutta Corporation. We are indebted to the *Calcutta Municipal Gazette* for the Report, which outlines a full scheme. Though the local conditions are entirely different, the scheme is a highly suggestive one and is well worth careful attention by those entrusted with the duty of working out a scheme of Compulsory Primary Education in any City area. We should be glad if a suitable programme for the successful working of Compulsory Primary Education in Bangalore City is worked out on the lines indicated in the Report of the Special Education Officer of the Calcutta Corporation. We would insist on a quinquennial programme and the underlying idea should be of bringing in every boy into the school in which he should be at the compulsory age. The Education Officer writes:

In the *Ad-interim* Report submitted by the Education Special Committee on September 19, 1924, and confirmed by the Corporation at its meeting, dated December 18, 1924, it was recommended that:-

In view of the altered conditions since the formulation of Dr. Dunn's scheme, there should be started in the 32 Wards of Calcutta, in the period of the next five years, at least

(*a*) One Model School in each Ward;
(*b*) One Class I type School in each Ward;
(*c*) One Borrowed Building School;
(*d*) 48 Bustee Schools;
(*e*) One Training College for Teachers, capable of accommodating 100 students.

The schools mentioned in (*c*) were to sit for two hours and a half in the morning or afternoon and the schools under head (*d*) were to be held in the morning as well as in the afternoon, for two hours and a half each time.

The following staff was sanctioned for these two types of schools: *Borrowed Building Schools*:—

1 Headmaster	..	Rs. 25 per month.
2 Assistant Teachers (each)	,,	20 ,,
1 Manual Instructor	,,	25 ,,

Bustee Schools:-

1 Headmaster	..	Rs. 45 per month.
2 Assistant Teachers (each)	,,	35 ,,
1 Manual Instructor	..	,, 25 ,,

In view of the fact that the acquisition of land and erection of building would take a long time (as experience has proved to be correct) it was decided to concentrate the efforts of the Education Department on the establishment of Borrowed Building and Bustee schools. A certain number of class I type schools were also started. Under the original scheme of Dr. Dunn, the new schools that came into existence every year (about 15) were to be taken up and placed on a sound basis from the beginning. These were labelled by him as class L type schools. In addition to this Dr. Dunn had proposed the improvement of 10 per cent of the existing schools. Although on the face of it we seem to have provided for two types of day schools (other than Model) proposed by Dr. Dunn, yet in reality, the purposes and facts are quite distinct. The difference between our Bustee schools and class I type schools is merely a matter of size and certain consequent differences of standard. Both are day schools, held in rented houses. The Bustee schools, however, have usually accommodation for 120 pupils and are generally taught up to class III. The class I type schools can, on the other hand, accommodate 200 250 pupils and teach up to class V. It has been found in practice that for every 100 pupils in the three lowest classes, there are only 10 15 boys in the two highest classes. It is, therefore, an advantage to retain classes I, II and III only, in the Bustee type day schools, providing for the two higher classes in fewer improved type schools. A certain amount of care has, of course, to be exercised in selecting the sites for these schools. Apart from this, however, there is no distinction between the two types. This is well brought out by the fact that some of our Bustee schools have become so popular that we have had to increase the staff over the number sanctioned until the conditions have approximated to that of class I type schools. As regards the suggestions of Dr. Dunn regarding the *methods* to be followed in starting new schools the Education Department has taken due note of them. It has, however,

been found necessary *not to take up, generally, the new schools that come into existence every year.* The original report accepted by the Government seems to have been drawn up under the impression that new schools sprang up in localities where there had been no schools previously. Actually, it has been found that new schools often spring up in localities where there are other schools, in unnecessary competition with these. The system of indiscriminate capitation grants has encouraged these schools. Recently, a certain number of schools have been organized by enterprising persons in the hope of getting them taken over by the Corporation, thereby securing Corporation service for themselves as the old staff of a school taken over, is usually retained.

A certain number of new schools have, of course, been taken over. But these were mainly organized by our Councillors with the help of local gentlemen, in co-operation with the Education Department. Usually, the procedure followed has been to take over one or more existing schools, locate them in a suitable rented house (which is sometimes the old school house of an aided school, repaired and altered to suit the new requirements) and provide them with qualified teachers (retaining such of the old Gurus and Moulvies, who are not found to be incompetent). In some cases, the local aided schools have proved hostile -generally where the teachers of those institutions are not qualified and cannot be taken over in the Corporation schools. In such cases, we have had to do a large amount of propaganda work to counteract malicious lies set afloat against our schools.

The Committee and the Department have been of opinion that in such localities, the Corporation grants should be considerably reduced or stopped altogether to put an end to undesirable competition between Corporation aided schools and Corporation managed schools and that such schools should not be taken over.

With regard to the hours of works and staff sanctioned for the Bustee schools, it was found that in the urban area, they are not quite suitable. Further, the syllabus laid down for Class II and upwards cannot be covered in the space of two hours and a half with groups of 30 boys in charge of one teacher. Under powers delegated by the Corporation, the hours of work were altered to bring them into line with the school conditions generally prevailing in Calcutta. The hours at present are 10-30 A.M. to 1 P.M., 1-30 P.M. to 4 P.M.

As an experimental measure, the hours of work were fixed somewhat differently in a few selected schools. It has been found that nearly half the boys in any particular school (Primary) are to be found in the lowest class (Class I of our schools). The pupils in this class are of very tender age, usually below 6 and require more careful and individual attention. It was, therefore, decided that in the particular schools mentioned, the lowest class should be held in the morning, for two hours only, the higher classes being held for four hours in the afternoon. In a Bustee school with 120 pupils, the distribution was somewhat as follows:-

Class I - 60; Class II- 40; Class III - 20.

With the ordinary working hours (10-30 to 4) one teacher would be in charge of Class II, one of Class III and two of the two sections of Class I. Usually, in such cases, the lowest class has to be discharged one hour earlier. Although, therefore, the hours of work are much longer, the pupils actually get, on an average, 8 minutes for the classes I and II, and 15 minutes for class III, of the teacher's attention. In the experiments conducted, on the other hand, the teachers worked in the morning with groups of 15 and in the day time, with groups of 20 and 10 pupils for classes I, II and III respectively. The average time per pupil was, therefore, the same for class I and considerably higher for classes II and III (12 minutes for class II and 24 minutes for class III). The advantages gained were therefore considerable. The younger children were detained in the school only for two hours in the morning, for the same amount of work, instead of keeping them in the school for four hours and a half during the hottest part of the day. The older children also were not compelled to come to school for five hours and did not have to come to school at 10-30 A.M., an hour when Bustee children (and even those of the poorer middle classes) can scarcely have their meals ready. The actual work done was increased by fifty per cent The Corporation was also a gainer, inasmuch as the same building could accommodate double the number of boys. This means a saving of half the rent.

Unfortunately, the guardians of the pupils did not realize the benefits of the altered hours of work and complained that the Corporation schools did not keep the young children shut up in the school building during the whole

of the day. The Ward Councillors were approached by them and although the matter was explained to the Councillors, they expressed their opinion that the schools should preferably return to the ordinary working hours to meet the demands of the guardians. In view of the facts that there was no sanction for extra allowance to the teachers who undertook the experiment, involving longer hours of work and that the experiment had lasted eight months and proved the benefits of it from the educational point of view beyond doubt and also in view of the lack of support in general, outside the Department, the experiments were brought to an end.

The case of the Borrowed Building schools is similar to the morning sections already discussed. There are the same advantages, as regards class I and the same objections from the guardians. The practice of holding class II and higher classes in these schools should, however, be discontinued. They should have only the lowest Class—Class I. The higher classes, strictly speaking, do not serve any very useful purpose in the part time schools. It has not, however, been possible so far to carry out the desired reforms in view of the fact that the old Corporation gave certain definite powers to the Committees of Borrowed Building schools and the requisite control had to be obtained after a good deal of trouble and unpleasantness. Another difficulty lies in the fact that we have not yet our own day schools near enough to these schools in all classes to carry out the necessary transfer of boys in the higher classes to the day school. Now that we have over 60 day schools, this question can seriously be taken up.

Section 5.—This brings us to the question of staff and salary of the schools and the teachers. So far as the morning sections are concerned, the salaries are adequate. Some provision should, however, be made for increments. It is suggested that the scale may be as follows :—

Headmaster Rs. 25—2—35.
Assistant Teachers—Rs. 20—2—30.
Manual Instructor—Rs. 25—2—35.

They should also be granted the benefits of the Corporation leave and service rules.

In the case of bustee schools, the salary recommended by the Education Special Committee for the Instructor was meant to be for a part-time teacher working in two schools. The actual recommendations, however, have been interpreted differently owing to certain technical difficulties. The lack of properly trained teachers has, however, made the whole matter, more or less, of a merely academic importance. This post should be replaced by that of an assistant teacher. The requirements of art and craft instruction should be fulfilled instead by imparting the necessary training to the assistant teachers. It is suggested that the staff and grades should be as follows :—

1 Headmaster—Rs. 50—5—75
3 Assistant Teachers—Rs. 40—4—60.

In the case of class I type schools, the staff provided should be similar in the same grade as the Bustee schools. The staff sanctioned is :

1 Headmaster—Rs. 45 per month.
5 Assistant Teachers Rs. 35 each per month.
1 Manual Instructor Rs. 40 per month.

The staff and grade suggested is :—

1 Headmaster Rs. 50—5—75.
6 Assistant Teachers—Rs. 40—1—60.

So far we have not started any Model Schools. The condition of two schools, however,—the Sasibuson Dey and Rajrajeswary Schools,—approximate partly to that of Model Schools. The deficiency lies principally in the lack of arrangement for Manual Instruction. The requirements regarding staff, etc., may therefore be based to some extent on the actual requirements in these schools.

The boys' school has on its staff

1 Headmaster	.. Rs	70 per month.
1 Assistant Headmaster	,,	45 ,,
8 Assistant Teachers	,,	35 ,,

The salaries have, however, been proved to be inadequate and there are no arrangements for manual instruction. On a review of the arrangements existing for art and craft instruction in schools like the Cossimbazar Polytechnique, the Saraswati Institute, as well as of the experience gained in attempting to introduce manual instruction in our schools, it would appear that some at least of the teachers will have to be trained in art and craft and that they should be helped by part-time artisan instructors. It is, therefore, suggested that the staff and salaries should be as follows :

		Per month.
1 Headmaster	.. Rs.	80—8—120
1 Assistant Headmaster	.. ,,	60—6—90
8 Assistant Teachers (each)	..	50—5—75
3 (part-time) artisan instructors not exceeding (each)	,,	30

In addition there should be a Sircar to keep accounts and do the general correspondence work of the school under the supervision of the Headmaster. The salary should be Rs. 30—2—40.

The case of the Training school has been carefully considered by the Education Special Committee and the following staff recommended :—

	Per month
Principal ..	.. Rs. 250–10–350
Vice-Principal ..	.. ,, 150–10–250
3 Lecturers ..	.. ,, 100–5–150
1 Drawing and Modelling Instructor	Rs. 50.
3 Artisan instructors (part-time)	Rs. 30.
1 Clerk (on the usual grade)	Rs. 40–125.

The teachers and other officers in the Bustee Class I type, Model and Training schools should be whole-time servants of the Corporation (except where specially indicated to the otherwise) and be subject to the ordinary leave and service rules.

It has already been pointed out that the morning sections started as an experimental measure in certain schools as well as the Borrowed Building schools are capable of valuable work with proper co-ordination with day schools. One of the difficulties pointed out was that no provision was made for extra allowance to the teachers. The difficulty may, of course, be overcome by employing a different set of teachers. In the interests of school work, it may, however, be necessary that the members of the staff of the afternoon school do the work also of the morning school. Besides, the shortening of hours of work in such schools in the afternoon (12 to 4 P.M. instead of 10-30 to 1 and 1-30 to 4 P.M.) without any decrease of pay will cause discontent in schools where the double arrangement does not hold. It is, therefore, suggested that in the case of schools held in the morning as well as afternoon, the scale of pay should be

Headmaster—Rs. 70—5—95.

Assistant Teacher—Rs. 55—4—75.

The actual expenditure per pupil will, if the above recommendations are accepted, be decreased and not increased.

The hours of work in such schools should be 7 A.M. to 9-30 A.M. and 12 noon to 4 P.M. In view of the prevailing opinion among the guardians that the primary schools should also serve the purpose of baby creches we may have to make some arrangement for the amusements and instruction of the youngest children in the afternoon. In that case, however, the Corporation will not be able to economize in the matter of house rent as previously indicated.

In view of the facts reported in the preceding paragraph, it becomes evident that the Corporation should not stick to its previous programme of having at least one Borrowed Building School in each Ward. The important point is to have a sufficient number of day schools and then to arrange morning sections or feeder schools in Borrowed Buildings as required. A further departure is necessary from the scheme set out in the *Ad-interim* Report, in view of the fact that the five years mentioned as the limit for providing primary schools for children of school-going age on a voluntary basis under the Bengal Primary Education Act of 1919, is long past. The late Mayor promised, in his inaugural address, to take up the question of compulsory primary education at an early date. The present Mayor has also expressed his desire to have a scheme drawn up—on an eight-year basis—for the introduction of universal free primary education in the city of Calcutta.

The number of children between the ages of 6 and 12 in the city of Calcutta is a little over a lakh. The high schools and the middle English schools cater to the needs of a little more than 20,000 children. There remain, therefore about 80,000 children to be looked after. Leaving out aided primary schools, which cannot be counted in a scheme of compulsory and free primary education, it appears that it will be necessary to start about 600 day schools of average accommodation 120 each, in addition to the 32 model schools which will look after 9,000 pupils. The number of schools to be started has been purposely calculated on the basis of 'Bustee' type day schools, as this will be the most common type. Actually, of course, the type may vary from one locality to another but for purposes of reckoning the number and expenditure, this is most convenient and nearest the actual probabilities.

At present we have nearly ninety schools under Corporation management. The programme for the next eight years, therefore, reduces to

(1) 4 Model schools.

(2) 65 Day schools (with such feeder schools or morning sections as may be required) annually.

The training school will, of course, have to be started immediately.

Before entering into the question of expenditure, it is necessary to discuss a few points regarding building and equipment.

The model schools cannot be held in rented houses. They must have their own buildings. Strictly speaking, the training school should also have its own building. But, as will

shortly be pointed out, the same purposes will be served by the building of a model school, with one or two additional rooms to serve as lecture halls.

The ordinary practice in training schools and colleges is to impart a course of theoretical (and laboratory) training along with a certain number of demonstration lessons, criticism lessons, and the like. The defect of this system of education is that the period of training is spent away from school teaching for which it is supposed to prepare. Practising schools are intended to remedy this defect, but as has been demonstrated in the case of Government Guru Training Schools, they have a tendency to melt away under the influence of too many Gurus in training. Another defect of this system is that these teachers have to undergo great hardships in the shape of loss of pay during their period of training--which must extend to at least a year. Even a stipend of the value of Rs. 10 per month can hardly do anything towards making up this loss to the already underpaid teachers.

From both points of view it is desirable to run the training school so as to allow the school teachers to attend them while working in schools. The stipend in such case will act as a real incentive and will help to pay any extra expenditure in tram fares, etc., due to the training classes.

The hours of work in our Day Schools are from 10-30 to 4 P.M. The hours of training may, therefore, be fixed between 7 and 9 in the morning and 6 to 9 in the evening. The total number of working hours will thus be the same as in ordinary training schools. That part of the training school curriculum which requires work in day light namely, work in the laboratory and workshop—should be covered in the morning; the evening being devoted to lecture and paper work. The demonstration lessons and other lessons requiring an actual class should be given in the afternoon in the schools to which the teachers are attached. If this proves derogatory to their dignity before the pupils, the difficulty can easily be overcome by transferring them on the completion of the period of training to some other schools.

The building and workshop of the Training School will easily be utilized for a Model School in the day time.

We may now return to the question of expenditure. For a Model School, the site should preferably be of an area of ten kottahs. A larger area may be chosen in the added areas but will not be possible in Calcutta. The approximate cost of this may be put down as Rs. 30,000. The building (capable of accommodating 300 pupils, *plus* workshop sheds), will cost about Rs. 35,000. A sum of Rs. 5,000 should be set apart for equipment. This will include the cost of—

(*a*) Workshop fittings.
(*b*) Baby desks for classes.
(*c*) Almirahs, tables and chairs for the office and workshops.
(*d*) Sundry expenditure on mats for seating, etc.

I have definitely left out the question of double benches as these are foreign to our tradition and at the same time less suitable for young children than mats and baby desks. In this matter my own experience is supported by experiments on parallel lines at Dacca by Mr West, to which my attention has been recently drawn by Mr. Lindsay, the Education Secretary, Government of Bengal. The experiments at Dacca have shown that mats, with baby desks, make the pupils more comfortable and much more attentive than double benches. The total capital expenditure on a Model School, therefore, works out at Rs. 70,000. Allowing a sum of Rs. 30,000 for an additional 10 kottahs of land for observation lessons and gardening, and a sum of Rs. 20,000 for extra rooms and fittings, the Training School may be expected to cost Rs. 50,000 more than Model School. The total capital outlay on 32 Model Schools (including the Training School) will, therefore, be within Rs. 22 lakhs.

In view of the fact that the Government of Bengal had promised to pay Rs. 16 lakhs and a quarter for Old Calcutta and that under the Biss Scheme, the Government had expressed its willingness to pay half the capital outlay in schools in added areas, the Corporation may justifiably ask the Government to pay the whole of the capital expenditure in Model Schools.

The recurring expenditure on the different schools will be as follows (calculated on the basis of minimum grade pay):—

Training School:	Per month. Rs.
Staff	880
Menials	90
(1 durwan, 2 bearers, 2 workshop and laboratory boys and 1 sweeper, each on Rs. 15 per month on an average.)	

Contingency (Laboratory and workshop Rs. 60, library Rs. 10, general contingencies Rs. 30.)	100
Stipends (100 stipends at Rs. 10 each.)	1,000
Total annual expenditure .. (approximately.)	25,000
Model School :—	
Staff	660
Menials (1 durwan, 1 bearer, 1 laboratory and workshop boy, 1 sweeper)	60
Contingency (Workshop and laboratory Rs. 50, general contingency Rs. 15.)	65
Total annual expenditure .. (approximately.)	9,500
Class I type schools :	
Staff	290
Menials (1 durwan, 1 bearer, 1 sweeper.)	30
Contingencies	10
House rent	70
Total annual expenditure ..	4,800
Bustee Schools :	
Staff	170
Menials (1 durwan and 1 sweeper)..	20
Contingency	6
House rent	40
Total annual expenditure .. (approximately.)	2 800

The minimum annual cost of the scheme (*minus* the grade increments) will therefore be on the basis already indicated :—

	Rs.
Training School	25,000
32 Model Schools	3,04,000
600 Day Schools	16,80,000
Total	20,09,000 (annually.)

THE APPORTIONMENT OF EXPENDITURE.

The Corporation has sanctioned a little less than three lakhs and a half of rupees for primary education this year. This is well within the limits which the Old Corporation were willing to bear, namely 4½ lakhs annually. With the present income and expenditure and the future liabilities to which the Corporation is already committed, it is doubtful if the Corporation can contribute more than one-fourth or one-third at most, even if economies are effected in other departments. The remainder of the recurring expense will have to be met partly out of provincial revenue (in the shape of Government contribution) and partly by the imposition of an education cess. It is true that when the question of Government grant was raised by the Old Corporation, the Government of Bengal expressed inability to do anything beyond making over the amount of existing grants-in-aid (about Rs. 30,000 annually). The financial position of the Government of Bengal is, however, much better now, and if the Corporation is willing to impose an education cess, it is likely that the Government will agree to bear part of the expenditure.

The amount of the Government contribution should be not less than one-third and not more than half the total recurring expenditure on the schools.

As regards the education cess, an imposition of one per cent of the annual valuation in two instalments of ½ per cent at suitable intervals will suffice. The existing annual valuation is Rs. 8 crores and average increase is 5 per cent per annum.

If the grade system is given effect to, the total recurring expenditure will be about Rs. 28 lakhs finally at the end of thirteen years.

If 6- 7 lakhs is met out of general revenue and nine lakhs by the Government, the remainder will come out of the Education Cess which will amount to Rs. 13 lakhs at the end of the period.

The question of compulsory education should not be taken up unless we are prepared to face the imposition of an Education Cess of one per cent of the gross annual valuation.

Such is the scheme proposed by the Special Officer of the Education Committee of the Calcutta Corporation. The points he stresses are important and it is to be hoped that his Report will attract the wide attention it deserves in other metropolitan areas, where primary education is not, despite compulsory Education Acts, what it ought to be.

The great event of this century has been the advent of electrical power and the awakening of public interest in its application to industry and national activity generally.—*Sir C. P. Ramaswamy Iyer.*

The primary duty of every Government is to safeguard the life and property of its citizens.—*H. E. the Governor of the Punjab.*

National revenue ought not to be raised out of a great social evil at the price of the degradation of the people.—*The Rev. Thomas Nightingale.*

Factories in Bombay in 1925.

The Annual Factory Report of the Bombay Presidency for 1925 indicates that the measures for improving the conditions under which operatives work are being steadily enforced. There are now 1,460 factories in the Presidency (one-fourth the total number of all Factories in India), a net increase of 115 during the last year. The increase has been due chiefly to the registration of small concerns employing approximately 20 persons in each. The number of operatives employed in all industries rose from 354,853 in the previous year to 370,460. This figure again roughly represents one-fourth the factory population of India. Wages have remained fairly steady.

The number of women in factories has increased from 72,679 in 1924 to 77,621 in 1925, while children have decreased from 9,779 in 1924 to 8,460 in the year under report. The total number of women employed is thus steadily increasing with the total number of persons employed, the percentage of women in 1924 being 20.5 per cent and in 1925, 21 per cent approximately. While a decrease of 13.6 per cent occurred in the number of children employed particularly in Bombay City, the same cannot be said of children presenting themselves for certification. The percentage of those presenting themselves who received half-time certificates was 10.6 in Bombay and 12.6 in Ahmedabad, those rejected for being already certified being 2.9 per cent in Bombay and 52.6 in Ahmedabad.

The evasion of the law regarding the employment of children in two factories the same day still continues despite official efforts to stop it. The Certifying Surgeon at Ahmedabad states that progress towards elimination of double certification depends on the better co-operation of the employers, but the recording of thumb impressions and identification marks has reduced the number of evasions. The 'Sathi' system is still prevalent in Ahemdabad. Under this system the children are brought in from the villages to work in the mills under an agreement whereby children are maintained by others who take in return the wages earned by the children. It has been alleged that the system has been abused and that such children are made to work in two mills, but official inquiry shows that the system is not widely extant. The certification system itself has reduced the number of children employees. A test inquiry from 10 per cent of the children employed in Ahmedabad revealed the following results: 64 per cent of the children examined lived with parents, 32 per cent with relations and 4 per cent with others. Of the 96 per cent living with parents and relations about one-third worked in two mills.

The introduction of compulsory education in large towns is expected further to narrow down the scope of double employment of children as also the legislation which Government have in hand for penalizing parents or guardians who are responsible for such employment.

A considerable amount of attention was paid to the match factories in the Bombay and Thana districts. These concerns rely on the employment of a considerable proportion of women and children. One factory manager was fined Rs. 1,000 for the irregular employment of children, while a second, whose time table for the employment of children appeared to have been made out more in accordance with the Railway train service than with manufacturing needs, was suspected of keeping a close watch on the Inspector's movements. A joint visit by two of the staff from an unsuspected point of approach confirmed suspicions and a fine of Rs. 700 was imposed in the resulting prosecutions. A third match factory was prosecuted and fined Rs. 450 for the night employment of women.

More attention was given to seasonal factories in the mofussil and successful prosecutions were instituted in a number of areas as a result of unexpected inspections by the staff.

The full-time staff instituted 146 cases against 24 factories for the illegal employment of women and children.

There was a material increase in the number of accidents which have risen from 922 in 1917 and 2,606 in 1924 to 3,115 in 1925, *i.e.*, from .31 per thousand in 1917 and .74 in 1924 to .84 in 1925. Serious accidents numbered 599 in 1925 as against 170 in the previous year and 75 in 1917. The abnormal rise in the serious accidents is ascribed to the new method of classification under which accidents involving absence from work for 21 days or more are treated as serious. In many instances operatives make a slight injury, the reason for journey to their homes in the country, and in such cases the accidents are usually classed as serious owing to the failure of the injured

persons to return to duty as soon as they are able to work. The number of fatal accidents fell from 82 in 1924 to 50 in the year under report.

The report dwells on the measures taken to improve sanitation in factories. During the last few years a considerable improvement in this direction has been made in mills in Ahmedabad. In Bombay a few mills have added arrangements whereby a regular disinfection of the latrines is effected, whilst in Ahmednagar several of the old dilapidated latrines have been rebuilt on more modern lines. In other mofussil areas advance has been made, but in a number of instances it is not only difficult to find the necessary labour for cleaning purposes, but also to ensure that latrines, when provided, are used.

Improved ventilation has taken place in several factories and the use of modern ventilating and humidification plant is gradually being extended in Sholapur.

The House of Mitsui—An Object-Lesson to Indians.

By Cornelius Burford.

The Mitsui family of Japan are often called the Rothschilds of the Far East, but they are more than that. They are not only great bankers, but great international merchants, shipowners and industrialists. Their enterprises and their interests cover the globe.

The executive organization of the House of Mitsui is restricted to members of the Mitsui family, as it is with the Rothschilds. It is also governed by a code of family laws, somewhat after the manner of that which is reputed to rule the Rothschilds. But there the resemblance ceases. The organization under which the House of Mitsui operates is unique. It is a voluntary association with some of the characteristics of a partnership, of a close corporation, of a voting trust, and of a holding company. In its present form it has existed less than two generations. In one form or another, however, this solidarity has been functioning successfully for more than three centuries.

Some idea of the importance of the Mitsuis in the financial world alone may be gathered from the fact that the new bank building they are erecting in Tokio will be the largest one in the world that is occupied by a single financial institution. It will be completed in 1928. The edifice will have a frontage of about 450 feet, and will cost approximately $8,000,000. American architects drew the plans and specifications, and an American contracting firm is doing the construction. A considerable part of the equipment, as well as the material, probably will be furnished from the United States.

The Mitsuis, by the way, were among the first in Japan to see and avail themselves of the possibilities of trade with the United States nearly three quarters of a century ago. From the day that members of the house witnessed the arrival of Commodore Perry in Japan, down to the present, the Mitsuis have been the leaders in introducing American lines of goods in Japan and in other places where they have found a profitable market for them.

The offices of Mitsui and Company, Limited, have been established for many years in New York City. Their principal merchandise departments in New York deal in and carry stocks of raw silk, braid, tea, hides and leather. The Mitsui Bank also has a branch in New York City.

What the Standard Oil is in the popular mind to America—a dominant, all-powerful, far-reaching business organization—the Mitsui Interests, as they are commonly known, are to Japan. Their extensive ownership of coal properties in Japan and in Eastern Asia make them one of the greatest individual colliery proprietors in the world. These coal fields supply fuel not only for the Mitsui industrial plants, but also for the fleets of steamers, as well as furnishing a considerable surplus for shipment to other countries.

The Mitsui steel works in Japan are great enterprises in which considerable American capital is reported to be invested, although the control and management are in the hands of the Mitsui Interests.

The Mitsui fleet of steamships is a considerable factor in the ocean carrying trade. These steamers carry passengers and cargo to practically all the great trading ports of the world.

The House of Mitsui is also the largest paper manufacturer in Japan, occupying the same position in that industry as the greatest paper manufacturing companies do in the United States and some other countries.

The Mitsuis have been in the banking business for nearly 250 years. They have been successful in a marked degree and their central establishment in Tokyo has branches in the principal cities in the world.

Branches of the Mitsui organization are in every important trade centre of the globe. It is asserted that the commercial houses and agencies of the Mitsui Company, the world around, outnumber the consular and diplomatic stations of the Japanese Government itself.

These are only a few typical institutions but they will serve to indicate the scope and diversity of ramifications of the activities of the House of Mitsui. It is also reputed to be a large owner in many great enterprises, not only in Japan but throughout the world, in which the name of Mitsui does not appear and the family is represented only upon the boards of directors of the companies.

The head of this vast organization is Baron Mitsui, who is also the head of the Mitsui family. Baron Mitsui, as a boy, some fifty years ago, studied American industry at first hand in various mills in the United States. Several of the sons of the families of the House of Mitsui are or have been students at American Universities and with American financial and business institutions.

Although the head of this vast organization is Baron Mitsui, the man to whom it owes much of its prosperity is Dr. Takuma Dan. He is the managing director of the Mitsui Gomei Kaisha, the holding company for all the varied and widespread Mitsui Interests. Dr. Dan was born in 1858 and was sent as a youth to America to study mining engineering at the Boston Institute of Technology, from which he graduated with honours. He was technical officer at the Government Meteorological Observatory, and later was in charge of the great Miike coal mine. When the latter was acquired by the Mitsui Company, he entered the employ of the House with which he has been associated ever since.

The membership of the House of Mitsui is composed of eleven constituent families. Each member has only one vote at the meetings. There are also associate members who are the retired heads of the family, but they have no vote in the councils.

There is also a board of directors which has general supervision over the company's more or less direct connections with various enterprises in Japan and throughout the world.

The House of Mitsui has many thousands of employees scattered all over the world. Their number has been variously estimated, but it probably ranges between seventy and eighty thousand. About one-third of these are office workers and the remainder are manual labourers, in the mines, on the steamships and elsewhere. As a general rule, there are a greater number of alien employees than Japanese in the Mitsui offices outside of Japan.

This practice is usual with concerns having branches in other countries, owing to the ready experience of the nationals in local business.

Economic Notes from London.

Sugar and Preference.

London, 29th July 1926.—All the sugar-producing and many of the sugar-using interests in the Dominions are represented on a committee which is now considering the final steps in connexion with the formation of a Sugar Federation of the British Empire. This body will seek to increase and improve the production of sugar in the British Empire; to secure in all Imperial markets terms at least as favourable as those accorded by foreign countries to their national or colonial producers; and to arrange that wherever possible such terms shall take the form of money value preferences in import duties stabilized for a period of years. Research work and propaganda to stimulate public demand for Empire sugar are among other objects in view.

It is worth while to point out that at present only about 16 per cent of the sugar imported into England comes from countries of the Empire, though with the necessary incentive they could supply all we require. Production is mainly in the hands of foreign nations which possess high protective tariffs, and as the Empire producer is shut out of every market but the British he can only develop future plans with our encouragement. The present duty on sugar amounts to 11*s.* 8*d.* per cwt., with a preference to the Imperial article of about ½*d.* per lb. Mr. H. T. Pooley, Secretary of the British Empire Producers' Organization, pointed out to a representative of *The Times Trade and Engineering Supplement* that this preference came just in time to save the

Empire industry from utter disaster, for the price of sugar, owing to increased production in foreign countries, has fallen to a level that does not repay the producer.

Mr. Churchill has hinted that there may be a reduction of the tea duty, but Mr. Pooley stated that although such a step was to be welcomed it is much more important that further consideration should be given to sugar, for while tea is already largely supplied by the Empire, sugar, an essential food product, is at the mercy of foreign producers.

"It is a consumer's question," he continued, "for if the Empire producer could be squeezed out of the market the foreigner would probably raise his prices. This was shown in a striking manner during the war, when the foreigner made us pay very dearly for our sugar. The lesson of the war period was surely that we should not on any account allow a situation to develop which will result in the elimination of the Imperial producer."

Most of the Empire cane sugar comes from Mauritius, which in 1924 sent us 121,000 tons. The West Indies and British Guiana sent 55,000 tons, Australia 44,000 tons, and British India 32,000 tons.

Mr. Pooley further pointed out that statements have been made that American money in large quantities is available for the further development of beet in Central Europe. Such an alliance would, he said, make it all the more necessary for the sugar industry of the Empire to take steps to ensure its own preservation.

Coal Stoppage.

Finance is not the only branch of economics in which the amateur thinks himself competent to put other people right. The Government has very wisely and properly refused to accept the solution of the coal stoppage advocated by a number of recognized leaders of religious thought. While material considerations should not be the sole criterion by which nations, governments, or individuals should decide their course, there are certain economic principles that must be upheld at all costs. As Mr. Baldwin said at Norwich, "the main job of coal producing and marketing is not one for politicians; it is for coal miners and coal-owners. It cannot be permanently carried on at the expense of the other trades of the country, and the adoption of a general policy of subsidization, no matter how it may be disguised, must in the end defeat its own purpose. That is not a question of sentiment but of hard fact.

Wealth and Wages.

In recent years there has been so much loose talk about standards of living, the right to work, and so on, that in many quarters it seems to have been overlooked that the average standard of living is not a matter decided by human volition or by Act of Parliament, but by the "real" wealth available for distribution among the population. The "right to work" is an illusion; there is an "obligation to work" that has rested upon mankind since its exclusion from the Garden of Eden. The trouble in this country is that the high wages in the sheltered industries make the remuneration of the unsheltered industries of less actual value than it would otherwise be. The workers in the unsheltered industries have not yet grasped the implications of high wages in the sheltered industries, and consequently it is not surprising to find that they think it unfair that prices should be maintained in other directions, while the price for their labour is reduced. But the remedy is not in raising their nominal wages, but in raising the exchange value of those wages by bringing down costs in the sheltered trades.

Debts to America.

Of recent days the chief topic of conversation, apart from that of the fate of the French franc, has been our debts to America. The subject was debated last week in the House of Commons, where a show of unanimity was made on the question of the consistent hardness of the United States in this matter. Nor was any bitterness taken out of the discussion by the official American memorandum on the affair. It appears now to be quite certain that the psychological gulf between Great Britain and America is unbridgeable: which means that, whatever happens to the debts due from other nations to us, British money will continue to cross the Atlantic.

Naturally one has one's own view on the nature of the war-debts; but there is no absolute right or wrong in the matter. Legally, America is right: morally (that is, according to the morals of those who were in the Great War from the beginning) she is wrong. It is useless to argue the point. How long it will pay America to continue in her present attitude is problematical; but it is certain that so long as it is good for America to have repaid to her the money which Great Britain borrowed on behalf of the Allies, she will insist on having it. To suggest, as some have suggested, that it was only Mr. Baldwin's folly that enabled the Americans

to get our money, seems to be naive in the extreme, as if financiers in this country had no control over the financial activities of our politicians!

Bias in History.

It was the real Mr. Baldwin, *our* Mr. Baldwin, who spoke last week to the Congress of Anglo-American Historians. Here his utterances were the result of no consultations but only of personal reflection. Consequently they are worth reading and remembering: Mr. Baldwin is surely the greatest occasional speaker of our time.

Like all sensible men who have lived to see the decay of that absurd Cambridge notion that History is a science, Mr. Baldwin believes implicitly in the desirability of bias in a historian. History is, as all the great English historians knew, from Gibbon to Belloc, an art, and personality is inherent in art. Who but the student for examinations has any use for the mere record, the dull, impartial chronicle which, emerging from our University Presses, is so often classified as History? Was it not Mr. E. V. Lucas who wrote of our dons' attempts at history:-

"It all comes out of the books they read
It all goes into the books they write."

That is why, for hodiernal instance, one can read a leading article in the *Morning Post*, and one cannot read a leading article in the *Morning Telegraph*. Real feeling, real personal conviction which is the result of all available study, is the root of good historical writing. Mr. Baldwin knows this fact well. But the old superstitions die hard that in order to be correct one must be colourless, that to every question there is more than one side, that in short, there is no such thing as a balance of truth.

Indian Debate in the Commons.

The Times described the proceedings of the House of Commons on Tuesday, the 20th inst., when the Vote of £47,401 for the India Office was discussed and agreed to, as being of the nature of hearing a statement rather than of a debate on Indian affairs. The Under-Secretary for India read out a crammed and condensed statement to a small audience and elicited a minimum of live comment in contradiction or support of his facts and deductions. Colonel Wedgwood led the Opposition and four other Labour Members spoke, but Mr. Ramsay MacDonald did not make a speech as he did last year. One Labour paper makes out that the speech of the evening was really that of Mr. Johnston (Dundee, Lab.), though this was reported in *The Times* in two lines only.

Indian Industries.

A recent issue of the *Financial Times* contains an article from Calcutta in the course of which the writer declares that one result of the War has been to stimulate enormously the industrial development of countries whose industries were backward in 1914: and that India is such a country. In support of this statement he gives some interesting statistics. Before the War, India consumed annually 3,600 million yards of cotton goods, 2,600 of which were imported and 1,000 manufactured by herself. To-day the consumption is the same, but the proportions are very different—2,000 million yards manufactured and 1,600 million imported. Before the War, Calcutta exported about 60 per cent of her jute in the raw state, and 40 per cent in the shape of cloth or bags. To-day the proportions are exactly reversed.

Important as they are, these figures would have been still more so if they had included a comparison between the exports of raw cotton before the War and at the present time. The Statistical Abstract for British India says that, in the "cotton year" of 1924-25, nearly 450,000 tons of home-grown cotton were consumed in India, while the export of raw cotton, for the last six months of that year, amounted to approximately 400,000 tons. It would seem, therefore, that the total exports are still much larger than the total home consumption; though doubtless much less so than they were in 1911.

New Silk Secret.

Dr. Dinshall R. Nanji, of Birmingham University, and Dr. Paton, formerly of Birmingham and now of Bristol, have, after seven years' research, found a process which may have a far-reaching effect on the textile trade. It is claimed that they can make a substitute for artificial silk from jute at a cost of £100 a ton, whereas the market price of artificial silk is between £600 and £800 a ton.

Tests prove that this new product is in every way comparable with, and, it is claimed in many ways superior to, the artificial silk at present being marketed. A substitute for cotton, derived from China grass, is also said to be possible. A soft, lustrous, and strong fibre is produced which is not brittle, and which can be spun without difficulty.

Australian Sandalwood Oil.

A report of the Science Committee of the Pharmaceutical Society of Great Britain

presented to that body and adopted by it on July 7, stated that: "Some correspondence has shown that this description of sandalwood oil derived from the wood of *Fusanus spicatus* is very largely used medicinally in Australia and other countries. The committee are of opinion that a monograph on this oil might be inserted in the "British Pharmaceutical Codex," so that oil of the quality required by the characters and tests could be ordered for use in Australia and wherever the appropriate authorities considered this variety of oil could usefully replace the more expensive kind obtained from *Santalum album.*"

THE IMPERIAL INSTITUTE.

The Imperial Institute, London, to be re-opened to the public on September 15, is undergoing great changes, under Lieut.-General Sir Wm. T. Furse, the new Director. The exhibition galleries have been closed to the public during the winter for reheating, relighting, and redecorations, and the method of displaying raw products is being greatly modernized. Diagrams and models have been arranged with samples of raw and finished products, transparencies, photographs, pictures, maps, charts, and printed notes, illustrating the subject of the diagram. In the arrangement of the sample rooms members of educational bodies have given assistance, particularly in suggesting the sequence of exhibits corresponding with the most modern methods of teaching.

Sesqui-Centennial International Exposition.

President Coolidge's Oration.

Philadelphia, July 12, 1926.- Pleading for a return by the Nation to the spiritual ideals of the Fathers of the Republic, President Coolidge delivered a history-making Independence Day oration in the colossal Sesqui-Centennial Stadium of the Sesqui-Centennial International Exposition, Philadelphia, at the exercises commemorating the Nation's Birth on July 5.

While the Exposition has been opened since June 1, the visit of the President and his party was virtually the official opening, in that the Government placed its stamp of approval on the Exposition, which marks the observance of the 150th anniversary of the signing of the Declaration of Independence.

The Chief Executive sounded a warning against "pagan materialism," and urged a rededication of the Nation to the ideals of our Forefathers by meditation, prayer and thanksgiving. The oration's forcefulness was augmented because of the setting in the same city where Thomas Jefferson wrote the memorable document and in the same city where the Continental Congress adopted the Declaration and the Liberty Bell pealed the message to the civilized world.

The solemnity and impressiveness of his mien continued as the President viewed the original Liberty Bell in Independence Hall in Philadelphia, and as he mounted the rostrum and sat in the great chair used by General Washington, the first President, in the same historic building.

With the President was Mrs. Coolidge and a glittering array of military and naval attaches. Due homage was paid the Chief Executive and his triumphant entry into the "Sesqui City" was a procession of solemn splendour. Military organizations as old as the Nation itself formed an escort and guard of honour.

The President and his party were fittingly entertained and feted during their stay as guests of the "Sesqui City." by Mayor W. Freeland Kendrick, who is also President of the Sesqui-Centennial Exposition Association, and prominent figures in national life.

MODEL SHOE FACTORY.

The development of the "Gentle Art" of shoe making, from the earliest times to the present day, is portrayed in an exhibit at which includes the operation of a model shoe factory, employing more than 100 skilled workmen.

The advance of the industry, from the days when footwear was made by the lone workman with his awl, lapstone and waxed ends, to the present time when thousands of pairs of all kinds of shoes and boots are turned out daily in the numerous factories in the country is shown step by step in the group of buildings which make up the exhibit of the Louis Mark Shoe Company, a Philadelphia concern operating sixteen retail stores in the "Sesqui City," and a huge factory in Chicago which supplies a large part of the boots worn by army men throughout the Nation.

Eighty-seven machines used in the making of shoes are in place in the model shoe factory. Twelve of these machines are new inventions and are shown at the Exposition for the first time anywhere. Expert shoemakers from the New England States have been imported by the Mark Company to operate the machines. The model factory, which operates from 1 P.M. to 10 P.M. daily, has a capacity of 300 pairs of shoes per day. The exhibit is free to Sesqui visitors and guides are posted at advantageous positions in the factory to explain the processes of making footwear.

The exhibit is planned on a scale larger than ever attempted before. In the Centennial Exposition in Philadelphia, fifty years ago, a group of shoe manufacturers combined to form an exhibit showing the "last word" in the development of the industry at that time. By comparison with the high-speed and efficient machines of to-day, the facilities of that time appear archaic.

The building in which the exhibit is housed is one of the show places on the Exposition grounds. A tower, surpassed in height only by the massive Tower of Light, rises ninety-seven feet into the air. The interior of the tower is illuminated by a specially-designed chandelier studded with 660 high-powered electric lamps.

The structure is of Moorish architecture, replete with lily pond in the front and sunken gardens and picturesque walks in a centre courtyard. A retail store and wholesale department are operated as a part of the exhibit, showing the entire process from the time the prepared leather is fed into machines at one end of the building and is fitted to the feet of visitors in the form of high-class shoes at the other end.

U. S. Children's Bureau.

A Baby Fashion Show, a model nursery, a model playground, educational motion pictures and a children's clinic in operation are among the interesting exhibits of the Children's Bureau of the United States Department of Labour at the Exposition.

The playground, 3 x 5 feet to scale, is equipped with swimming pools, tennis courts, baseball diamonds, swings, ladders and flying rings. In the baby fashion show are baby dolls in genuine costumes of the 18th, 19th and 20th centuries, borrowed by the Exposition through the courtesy of the National Museum. In the model clinic, a glass enclosed room constructed within the exhibit pavilion, children under the age of six will be weighed and measured by a nurse and given free medical examination as a demonstration of the value of such clinical work in the normal development of children.

A motion picture, "Well Born," will show the essentials of pre-natal care and a film, "Posture," showing the importance of this subject to the child's health, will be shown. This film has been produced under the direction of Dr. Armin Klein, of the Massachusetts General Hospital.

Fifty-Year-Old "Iron Horse" Puffs to Exposition.

Puffing its way laboriously from Baltimore, the largest passenger locomotive in use fifty years ago, has taken its place beside one of the mammoth "iron horses" recently turned out by the Baldwin Locomotive Works, at an exhibit of that corporation at the Sesqui-Centennial International Exposition, in Philadelphia.

The wonder-provoking engine of a half-century ago, which was one of the chief attractions at the Centennial Exposition in 1876, is a pitiful pigmy beside the massive locomotive designed for use in 1926. The Baltimore engine took a prize at the Centennial Exposition and its noisy and slow operation was a constant marvel while it was on view.

Miniature Railroad Exhibit.

A miniature railroad, built by scale and showing various types of trains of standard equipment operating on four tracks representing a typical section of the roadbed, is the principal feature of the exhibit of the Pennsylvania Railroad opened recently in the Palace of Liberal Arts and Manufactures at the Exposition

Tunnels, signal towers and other mechanical contrivances are shown in accurate detail and the landscape is representative of the territory which the "Pennsy" serves. A huge painting, showing the side view of a standard steel coach, in exact dimensions, forms a background for the exhibit, while the reception room in front of the mechanical arrangement is furnished in the style used during the Colonial period.

The creation of cheap power must necessarily call into existence new industries and transform old ones.—*Sir Felix Schustar.*

It is only when you are on the verge of the grave that people begin to appreciate you.—*T. P. O'Connor, M.P.*

Indian Economic Notes.

Hairy Caterpillar.

The following is from *Digest* No. 47 issued by the Madras Department of Agriculture :—The young groundnut crops in the Pollachi Taluk have been badly damaged by the hairy caterpillar this year. The only effective control known for this pest is of a preventive nature. A careful watch must be kept for the emergence of the moths after the first rains of the season. These moths should then be caught by hand and destroyed before they can lay eggs which hatch out into the caterpillars which devour the crops. If this emergence is missed it is not easy later on to check the damage which is done by the caterpillars.

Last year this method of control was demonstrated by the department in the villages of Panicuppam and Malayanpattu in the South Arcot District. Here the June rains were normal and the crops were sown. No more rain was received till 23rd July. Two days later the moths began to emerge, and 4,000 were caught at Panicuppam and 84,000 at Malayanpattu. The next rain fell from 1st to 6th August and there was a second emergence of moths, and 63,000 were caught at Panicuppam and three lakhs at Malayanpattu. There was a third emergence on 11th August following more rain, and 21,000 were caught at Panicuppam and a lakh at Malayanpattu. After this no more moths appeared at this last village, but two more small lots appeared at Panicuppam. About five lakhs of moths were caught at these two villages, and the females largely outnumbered the males. Each female lays about a thousand eggs, so that these catching operations prevented the existence later on of over 250 million caterpillars, and the crops were protected.

Now this method of control needs organization. Boys and girls can be employed and paid a fixed rate per 100 moths caught—about a half to a quarter anna. The work needs supervision, since the moths are not so easy to catch in the cover provided by the older crops. This supervision must be done by the owners of the field and care must be taken to see that none of the moths are missed, especially in the older crops, and this is not really difficult.

The whole secret of success lies in being ready and watching for the appearance of the moths with the first rains, and catching them promptly before they can lay eggs, and the ryots must learn to do this. It is no good waiting till the caterpillars have appeared and begun to eat the crops, and then appealing to the Agricultural Department for help. By that time it is too late to do anything.

The method has been demonstrated to the ryots in several places, in as many places in fact as the limited staff of the Department will allow. Thus it was demonstrated at Semballi in the Ramnad District, and also round Pollachi. The moths emerge with the first heavy rains, and these come at different times in different districts, and of course vary from year to year. In Pollachi they appear earlier than in South Arcot, and may be expected in May and again in June. Again in Ramnad they are later than in South Arcot and may be expected in September. It is necessary to study the meteorological conditions of each district so as to know when the moths may be expected, and then to make arrangements to catch them, and this the Agricultural Department are trying to do, but it is very difficult with the very limited number of men that can be spared for the work. An attempt is being made to educate the ryots as to the habits and life-history of the pest, and to teach them the control measures, and to take up typical villages and actually demonstrate the method in them.

Prompt Payment of Wages.

The need for prompt payment of wages is the subject of a letter from the Government of India to local governments, for ascertaining the latter's opinion and that of the interests concerned on the proposal of the Government of India to set statutory limits to the time within which wages be paid. The Government of India consider that information received from local governments reveal a state of affairs which is other than satisfactory, for it appeared to be the rule in certain industries for monthly wages to be systematically withheld until a fortnight after the close of the month. Such delays had in some cases made the labourers strike. It is proposed that monthly wages be ordinarily paid within a week of the close of the month, that legislation be confined to mines and factories, and the task of prosecuting those who disregarded it be left to the inspection staff already working under the Factories

and Mines Act. Replies are invited to the letter not later than 1st January, 1927.

THE UNEMPLOYMENT PROBLEM.

The *Pioneer* writes: The Government of Madras have taken action on a resolution passed in the Legislative Council of the Presidency asking for an enquiry into the problem of unemployment among the educated middle classes. A representative Committee has been appointed to consider the question and to suggest measures of relief. Sir George Paddison, who recently headed the Government of India's deputation to South Africa, has been appointed President of the Committee whose labours should have beneficial results judging from the personnel and the questionnaire which has been issued to witnesses. The enquiry is very comprehensive and relates to persons of all degrees of education and all varieties of professions, including Railways and Commerce. As in most other parts of India, the problem of unemployment is quite acute in the South and many are the proposed remedies engaging the attention of the Committee. Vocational training in schools, technical education, the diversion of the middle classes to agriculture, mechanical occupations, trade and commerce, the development of banking, co-operative production and distribution and the establishment of agricultural colonies for the educated—all these are among the suggestions which have been put forward. The recommendations of a Committee, however wise and comprehensive, cannot, of course, lead to an immediate solution of the trouble.

ECONOMIC SURVEY OF INDIA.

Dewan Bahadur Rangachary has given notice of a resolution he intends moving at the forthcoming session of the Assembly recommending to His Excellency the Governor-General in Council that he may be pleased to approve of the majority report of the Indian Economic Enquiry Committee of 1923 and take early steps to introduce the scheme of economic survey outlined therein and for the purpose he be further pleased to establish a Central Bureau of Statistics to replace the present attenuated Department of Statistics; to circularize provincial governments suggesting the starting of suitable Provincial Statistical Bureaus to work in collaboration with the Central Bureau; to make an immediate beginning by providing for an allotment out of the central revenues the initial cost of 31.87 lakhs, as also a substantial portion of the 57.55 lakhs required for recurring expenditure from the next financial year 1927-28 and to make arrangements for compiling the estimates of income and wealth for regions and individuals for the purpose of measuring the economic growth of the country and to invite the Indian States to undertake economic surveys on parallel lines and to join British India in a common organization for the collection and publication of statistical data and results relating to the economic condition of their people.

INDIAN CUSTOMS REVENUE.

According to returns received in the Department of Commercial Intelligence and Statistics, the grand total of gross Indian Sea and Land Customs Revenue (excluding Salt Revenue) during the month of July, 1926, amounted to Rs. 4,37 lakhs, as against Rs. 3,25½ lakhs in the preceding month and Rs. 3,80 lakhs in July, 1925. The total revenue realized in the four months, April to July, 1926, was Rs. 15,41 lakhs against Rs. 14,30 lakhs in the same period last year. Import duties contributed Rs. 13,06 lakhs; export duties Rs. 1.53 lakhs; excise duties on kerosene Rs. 38 lakhs and on motor spirit Rs. 33 lakhs; and land customs and miscellaneous Rs. 11 lakhs. Increases were noticeable in import duties on sugar, iron and steel, cotton piece-goods, tobacco, motor cars and cycles, yarn and textile fabrics (other than cotton and silk), cutlery and hardware, and liquors; in export duty on tea; and in excise duties on motor spirit and kerosene. On the other hand, import duties on mineral oils, matches and match splints and veneers, railway plant, metals other than iron and steel, pneumatic rubber tyres, machinery and cotton yarn, and export duties on rice and jute (raw and manufactured) showed important decreases. The protective special duties collected on private imports during the four months, April to July, 1926, yielded Rs. 1,18⅔ lakhs. The duties on Government Stores amounted to Rs. 30⅓ lakhs inclusive of the protective duties, as against Rs. 34½ lakhs in the four months ended July, 1925.

JOINT-STOCK COMPANIES IN BENGAL.

During the month of July, 1926, fifteen new companies with an aggregate authorized capital of Rs. 17,40,000 were registered under the Indian Companies Act (VII of 1913) in the Bengal Presidency.

We are told by our clients that they must economize owing to the severe taxation at present existing in this country.—*Lord Lurgan.*

Topics in the Journals.

The Cobwebs of Ignorance.

In a recent issue of the *Navajiwan*, Mahatma Ghandi unfolds his views on the indispensability of the Khaddar. The article is of more than ordinary interest, in view of the fact that he answers in it some strong criticism preferred against his campaign for Khaddar. He writes :—

An English writer has observed that in vindicating truth there is far more labour in disentangling the knots or ignorance than in propounding the truth itself. Truth is by nature self-evident. As soon as you remove the cobwebs of ignorance that surround it, it shines clear. That is just the sort of handicap under which the simple and straight movement of the spinning wheel is labouring to-day. It is expected to fulfil conditions which no one ever claimed it to fulfil, and when it fails to do so, the blame is laid at its door rather than at the critic's! A capital illustration of this is afforded by some paragraphs sent by a lower of Khadi, the substance of which is :—

"(1) Now that you have begun to claim the spinning wheel as a universal provider, it has simply filled us with disgust. And, so, to-day, we the intelligentsia, repudiate you and your spinning wheel alike.

"(2) It may be possible to introduce hand spinning in small villages and if you confined yourself simply to that, nobody would criticize you and you might even get some sympathy.

"(3) But when you try to make out that even spiritual salvation can come through the spinning wheel you make yourself ridiculous. But you being a 'great' man, it is just possible that some simple-minded people may swallow whatever you say. The educated are not going to stand your nonsense any more; because you have now cast all moderation to the winds, and particularly since your voluntary retirement you have not hesitated to prescribe the spinning wheel to everybody and for every conceivable objects under heaven. Does one want to observe Brahmacharya? Let him take to the spinning wheel. Do you want to secure the release of the innocent Bengal patriots who are in jail? Ply the wheel. Do you want to ameliorate the economic condition of India? Why then,—the wheel again! Not only this you have even offered the spinning wheel to veteran soldiers fit to wield the sword and the spear. The wonder is that you do not perceive the utter madness of all this.

"(4) What would it matter to Britain if India ceased to purchase sixty crore rupees worth of cloth from her? Do you suppose that that would make her abdicate her political power in India? See, how woefully mistaken you are in declaring that there is no political programme more valuable than hand spinning.

"(5) You have yet to prove that the spinning wheel can solve even the bread problem for the masses. The harm that has resulted from it on the other hand is quite apparent. Just think of the Khadi shops that have come to grief already!

"(6) You even seem to suggest that other industrial activities should be dropped for the sake of hand spinning."

I have condensed the objections in my own words. I do not think that I have hereby done the writer any injustice. On the contrary, I have erred, if at all, in removing or toning down the bitterness of his writing. An embittered patriot has a right to employ harsh language towards a person who has come to be dubbed a 'Mahatma'. For it enables him to modify, to some extent at least, his rising anger over the spectacle of destitution that his country presents on the one hand and its utter helplessness to remedy it on the other. My duty is not to advertise his anger but to try, if it is at all possible, to remove the confusion engendered by that anger.

To proceed now to the examination of the six points of the correspondent :

A Universal Provider ?

(1) I have never tried to make any one regard the spinning wheel as his Kamadhenu or universal provider; I have certainly regarded it as my Kamadhenu and in this I have done nothing more than what crores of Hindus in India are to-day doing when they take up a little bit of clay, mould it into a small oval ball, mentally invest it with the Divine presence and make it their Kamadhenu by offering up their entire being to it. They do not ask their neighbours to worship it; on the contrary after their worship is over they consign that sacred ball of clay to the water: Why should then the intelligentsia feel disgusted if with crores of my fellows, I lose my head and make the spinning wheel my Kamadhenu? May I not expect a measure of toleration from them? But as a matter of fact the intelligentsia as a body have not given me the go-by yet. To believe or make others believe, therefore, that all the intelligentsia are disgusted, because a few are, is hardly proper, but, supposing for the time being that all of them do actually abandon me altogether, then, if my faith is inviolate, as all true faith must be, it will simply blaze forth and burn all the brighter for that reason. When in 1908, on board the 'Kildonan Castle' I declared my faith in the spinning wheel in the pages of the 'Hind Swaraj (Indian Home Rule)', I stood absolutely alone. Will then, my God who guided my pen into making that declaration of faith at that time, abandon me, when it is put on its trial?

Spin for Sacrifice.

(2) It is in the villages only that the spinning wheel is largely meant to be introduced and it is just there that it is at present going on. And if to-day I beg for sympathy and support, it is for its revival in our villages. Again it is just for this that I have to canvass the sympathy of the educated class. For, just as we want to teach our villagers, who are ignorant, how to protect themselves against the ravages of malaria and such other diseases, some people from the educated and middle class will first have to become adepts in the knowledge of the sanitary measures necessary to extirpate these diseases and to observe the rules themselves, similarly it is only when some of us learn spinning and practise it ceaselessly ourselves that we shall be able to teach it to our villagers and overcome their apathy by our personal example. And it goes without saying that unless we use the Khadi that they produce the spinning wheel cannot live. My appeal to the people

who live in the cities, therefore, is to spin for sacrifice, while their brethren in the villages do it for reward. The thing is simplicity itself. If only we get at the heart of it, we will find that it hardly affords any room for criticism.

I Speak from Experience.

(3) I do regard the spinning wheel as a gateway to my spiritual salvation, but I recommend it to others only as a powerful weapon for the attainment of Swaraj and the amelioration of the economic condition of the country. To those also who aspire to observe Brahmacharya, I do present the spinning wheel. It is not a thing to be despised, for it is experience here that speaks. A person who wants to subdue his passions has need to be calm. All commotion within him ought to cease ; and so quiet and gentle is the motion of the spinning wheel, that it has known to still the passions of those who have turned it in the fulness of faith. I have been able to compose my anger by turning it, and I can adduce similar testimony of several other Brahmacharis. Of course it would be quite easy to laugh down all such persons as fools and nincompops, but it would not be found to be cheap in the end. For the scoffer in a fit of anger, loses a beautiful means wherewith to compose his passion and attain vigour and strength. I therefore particularly recommend to every young man and young woman who reads these lines to give the spinning wheel a trial. They will find that shortly after they sit down to spin, their passions begin to subside. I do not mean to say that they would remain calm for all the rest of the day even after the spinning is discontinued, for, human passions are fleeter even than the wind and to subdue them completely requires no end of patience. All that I claim is that in the spinning wheel they will find a powerful means of cultivating steadiness. But then, some one will ask, why do not I recommend the far more poetical rosary, if that is the purpose which it is intended to subserve? My reply to this is that the spinning wheel possesses some virtues in addition to those it has in common with the rosary. I have not prescribed it for a recluse living in a state of nature in a cave of the Himalayas and subsisting on the herbs and roots of the forest. I have placed it only before such countless persons like myself, who while living in the work-a-day world, are anxious to serve the country and to practise Brahmacharya simultaneously.

And for ridiculing my suggestion to ply the spinning wheel for securing the release of the Bengal prisoners, it only comes to this that we are not prepared to stir ourselves a single inch to secure their release. For the spinning wheel here means the boycott of all foreign cloth. And what a compelling force that has and how we are at present unable to develop any other kind of force, we shall presently see as we proceed with our examination of the other points that follow. My presenting the spinning wheel even to veteran soldiers fit to wield the lance and the sword, therefore, is not a sign of madness but a hallmark of knowledge, - a knowledge not derived merely from book learning but from the plenitude of experience.

The Only Political Programme.

(4) The question as to what loss would the British suffer if India stopped purchasing her sixty crore rupees worth of cloth from them is quite out of place. Our duty is simply to see whether, and if so, how far it would profit us. The stopping of the purchase of sixty crores worth of foreign cloth would, in the first place, mean the saving of so much money to the crores of Indian homes. In other words it would mean so much addition to their income. Then, it would spell the creation of so much fresh industry, the organization of crores into a joint co-operative effort, the conservation and utilization of the energy of the millions and the dedication of crores of lives to the service of the Motherland. The carrying out of such a gigantic task would, further, give us a realization of our own strength. It would mean our acquiring a thorough mastery of the detail and innumerable knotty problems which it presents, *e.g.*, learning to keep account of every pie, learning to live in the village in sanitary and healthy conditions, removing the difficulties that block the way and so on. For unless we learn all this, we would not be able to accomplish this task. The spinning wheel then provides us with a means for generating this capacity in us. So long, therefore, as one has not grasped the inner meaning of the wheel, one may ridicule it, but when once the grand meaning is understood it would become simply impossible to tear oneself away from it.

Again the British are an intelligent people. The officials are a wise and shrewd lot. I know this. That is why I present the spinning wheel to my people. We cannot over-reach the British by the glibness of our tongue or by the power of our pen. Our threats they have grown quite accustomed to, while as for our physical prowess it can avail us but little against their bombs rained down from the aeroplanes. But these people understand and respect patience, perseverance, determination and capacity for organization. Cloth represents the biggest item of their trade. The accomplishment of its boycott by us would awaken them to a sense of our strength. They are not holding India merely to feed their pride, nor is it by mere force of arms, but it is by tact and cunning that their rule over us is maintained. When their trade is made to rest on our untrammelled free will their rule also will undergo a similar transformation. To day both are being imposed on us against our will. If we succeed in shaping one of them according to our will the other will automatically follow suit. But it is easy enough to understand that while their trade relations with us remain unchanged, no change in the political relationship is possible.

I may repeat that I would to-day discard the spinning wheel if some one shows a better and more universal political programme than hand-spinning. But upto this time I have found none, I have been shown none. I am anxious to know if there is any.

How it Solves the Bread Problem.

(5) That the spinning wheel can solve our bread problem hardly needs to be proved to a reader of the *Navajivan*. The figures published about various Khadi organizations would show that thousands of poor women are to day eking out their living by spinning. Nobody has yet denied that the spinning wheel can bring the spinner at least an anna a day. And there are crores of people in India who hardly earn even a pice a day. So long as things stand thus, it is hardly necessary to point out the close relation that exists between the spinning wheel and the bread problem.

As for the charge that the spinning wheel has done harm to the country it is up to those who love it to prove it. This activity is by its very nature such that there can be no waste of effort in it. Nothing can interrupt its continuity and even a little exercise of it saves one from mighty evils. What does it

matter if some Khadi shops came to an end? That phenomenon is common to every trade. The money invested in them has at least remained in the country, while the experience gained through it has enabled us to make further progress. Besides, if some of the shops had to close down, instances can be cited of many more better organized shops, that have grown up in their place.

SUPPLEMENTS, DOES NOT REPLACE.

(6) I have not contemplated, much less advised, the abandonment of a single healthy, life-giving industrial activity for the sake of hand-spinning. The entire foundation of the spinning wheel rests on the fact that there are crores of semi-unemployed people in India. And I should admit that if there were none such there would be no room for the spinning wheel. But as a matter of fact everybody who has been to our villages knows that they have months of idleness which may prove their ruin. Even my appeal to the middle class people to spin for sacrifice is with reference to their spare hours. The spinning wheel movement is destructive of no enterprise whatever. It is life-giving activity. And that is why I have called it Annapurna or the butter for bread or the replenisher.

Economic Advance in India.

Dr. Sam Higginbottom, recently home from India, where he has been successful in introducing up-to-date American methods of farming, paints a grim picture of the poverty there, says Elsie Well in the course of an article in the *New York Times*. Dr. Higginbottom confirms Gandhi's statement that 100,000,000 people in India are in a state of chronic starvation. And this in a country where 80 per cent of the population is engaged in agriculture—a country that grows more rice and sugarcane than any country in the world, leads all in the production of tea, oilseeds, sorghums and millets, and is second only to America in cotton raising.

Under proper conditions of cultivation India could become a most prosperous country, asserts Dr. Higginbottom, Superintendent of Allahabad Agricultural Institute, who has recently received the degree of Doctor of Philanthrophy from Princeton—his alma mater—the first American to be thus honoured.

"There are three primary causes for poverty in India," he said. "First, the belief in the transmigration of souls, in which the destruction of animal life is regarded as murder; second, caste, and third the low place given to woman."

YEARLY LOSS OF CATTLE.

Dr. Higginbottom can discourse impressively on the theme of cow-worship.

"There are 65 horned cattle to every 100 acres of land and 61 to each 100 of population," he said. "The result is a severe economic pressure on the soil of India. Over 90 per cent of the cattle are an economic loss to the country. The cow does not pay her board bill in milk and calves.

"Free-lance cattle, unattached to any home, are permitted to wander through the country and eat as they can. Naturally, if the rains fail, the cattle suffer and many die because of lack of fodder. Few farmers keep more than one cow for their own use. It is the custom to give bull calves to the temples, where they are stamped with the sacred brand and turned loose to wander through fields and villages to subsist as they can. The obvious remedy—to send surplus cattle to the slaughter-house as in Europe and America—would horrify the Hindus.

"Hindus regard the killing of a cow as the most hideous crime that can be perpetrated. The cow, in a country that believes in transmigration, is worshipped as a god and stands as a symbol of the whole animal world striving for higher life. A Hindu child is taught at its mother's knee to venerate the cow above all living things. The Hindu regards the cow as we regard God or Christ. You might as well expect a Christian to express approval of the Crucifixion as a Hindu to sanction the slaughter of a cow.

CAN'T BE SOLD FOR BEEF.

"Everything connected with the cow is sacred. All orthodox Hindus who come to Western countries, all Hindu boys in America or English Universities, must go through a ritual of purification before they return to their high-caste homes. The purification ceremony requires that they partake of the products of the cow.

"In India a man who wishes to be regarded as a benefactor does not, as a rule, erect a university, a library, a hospital or a home for convalescent children. He establishes a Gowshala, a home for indigent, aged and decrepit cows. The welfare of the cow is far more important to a Hindu than the welfare of the child. And yet in a country that venerates the cow, the cattle are stunted and dwarfed. The best dairy animal in India gives 5,000 to 7,000 pounds of milk a year in contrast to the best American breed, yielding 20,000 to 30,000 pounds. Under present conditions the cow is eating India out of house and home.

"In India the Western way of utilizing surplus cattle cannot be applied. A constructive programme must take into account the sensibilities of the Hindu and manipulate them for progress. The Brahman boy should be trained to appreciate the economic value of the cow. All cattle collected in the Gowshalas should be studied. The deformed should be allowed to die and only the best animals should be used for breeding. The best breeds of other countries should be introduced. On our farm we have obtained excellent results from American Jersey bulls. Cows bred from one of our American Jersey sires and an Indian mother gives 6,000 to 9,000 pounds of milk a year, while the mother gives only 2,000.

NON-INJURY TO ANIMALS EXPENSIVE.

"The doctrine of *ahimsa*, or non-injury to any living thing, keeps alive not only cattle, but all other animals. As a consequence, the animals suffer as well as the human beings. Monkeys are sacred. Unmolested and unharmed, they raid gardens and orchards so often that farmers, in a country where fruit can be cheaply and abundantly grown, are discouraged from planting fruit trees. It has been estimated that rats alone cost India $70,000,000 annually in the grain they consume. In the Punjab, the Government started a campaign to eliminate rats.

They distributed traps to the farmers, but the high-caste Hindus ordered the release of the rats as soon as they were caught."

"The caste system is an overwhelming burden," said Dr. Higginbottom. "The low-caste people are kept down and live in enforced and wretched idleness half their time. If a man belongs to the washerman caste, in a community where 40 per cent of his neighbours have clothing that costs less than a dollar a year, there will be little to wash. If his sons cannot get laundry work to do the neighbours shrug their shoulders: 'It's too bad'. But nothing can be done about it. In any other part of the world the son of a washerman could drive a team or hoe a field. Not in India. The son of a washerman is a washerman to the end of his days.

"I employed a sweeper whose duties were of the lightest description. He complained that he could not support his wife and six children on $2 a month. I suggested that he helps the gardener and I would gladly pay him. A few minutes later the gardener gave me notice. He could not work with a sweeper. He would be shunned by the members of his own caste. That settled it. Had I employed the sweeper the whole tribe of gardeners would have boycotted me. There are seven classes of sweepers alone. One can feed and wash a dog, another cannot. A second cannot wash a cat's saucer. A third can feed chickens, but a fourth cannot. And so on through a complicated list of sweeper commandments.

Illiteracy of Women.

"The sixty million outcastes have just as rigid rules of caste as those higher up. Among leather workers some will eat the beef of an animal that has died of old age or disease, but not one that has been butchered. No orthodox Hindu of caste would touch beef. It is even regarded as a criminal offence to beat a man with a shoe, because an orthodox man touched by leather, which is the product of a dead animal, becomes defiled. Lower than the leather worker and the washerman in the social scale is the dom, who buries the dead. Beneath all of these is the scavanger who handles the offal.

"All this has a direct bearing on agriculture. To grow bigger and better crops in India we must have manure to enrich the soil. Cowdung is almost entirely consumed for purification rites and fuel. Any other kind is defiling to Hindu caste ideas. India's soil responds gratefully to bone fertilization, but this is on the taboo list because the majority of Indian farmers will not handle the bones of dead animals.

"It is not only caste that keeps the people down but also the low status of woman. Only 2 per cent of the women of India are literate. The 98 per cent pass on to their children the superstitions of their own ignorance.

"The poverty of the Indian farmer drags him down and makes him accept his situation as hopeless. Because he lacks capital to start with, he builds houses and roads of mud, which because of the constant need for repair are in the long run an expensive luxury. I can speak out of my own experience. I had to spend $2,000 in ten years to maintain a bamboo and grass thatch shed 200 feet long and 30 feet wide over my silos, and even with constant and diligent repair I could not keep out rain, snakes and ants. Another shed with iron pillars and tiles required an original outlay of $2,600, but at the end of ten years it was as good as new, while the bamboo and grass thatch shed was not worth a penny.

Need Tractors.

"The actual cultivator of the land, the farmer, who determines the sowing and can dispose of his own produce, makes about three dollars a month. The farm labourer does not average more than two or two-fifty. The farmer is so heavily in debt to the money-lender that his crop is usually mortgaged before it is harvested. A wedding feast impoverishes him for life The money-lender takes the crop from the threshing floor and doles out to the farmer from week to week just enough grain to keep body and soul together.

"In the villages in Central India with which I am most familiar the interest on loans varies from 36 to 100 per cent. And once in the clutches of the money-lender the farmer never gets free, for the lender either will not give receipts for payments made or take advantage of the farmer's illiteracy to frame up preposterous terms that can never be met.

"Two and a half to four acres represent the average holdings in the Ganges Valley and in the congested districts of the Punjab, but because of the fragmentation of holdings this land is not all in one piece. Such division of the ancestral land among the heirs would not be so bad if the whole amount of the property was divided into equal portions among, say for example, four sons. But each field has to be broken up into four equal portions. The holdings are often so small that they resemble checker-boards. Many fields are so narrow that it is impossible to turn the plow. In America one man with his tractors and up-to-date farm machinery can look after twenty-four acres. In India one man can handle only one acre.

"There is no reason why India cannot become one of the prosperous countries of the world instead of remaining one of the most backward." Dr. Higginbottom says. "India now records the lowest yield per acre of cultivated land of any country. What India needs is better tools and implements. The limiting factor is not money, but men trained to use them. Plows and tractors could be purchased through the rural co-operative societies."

British Public Schools.

The British Public Schools have been held up for admiration so much in India that it is of interest to read what a writer (Mr. T. W. Wilkinson) has to say about them in the educational system as it prevails in England to-day. He writes in *Titbits* :—

Now that a "cut" in our expenditure on education seems likely, attention is being directed to the misapplication of ancient educational endowments. Why, it is asked, should the sons of more or less wealthy parents continue to enjoy benefits, amounting to hundreds of thousands of pounds per year, intended for poor scholars?

This diversion of money from the use to which it was meant that it should be put takes place through our ancient schools, "public" and "grammar". With very few exceptions these were established for the sons of poor parents—small shopkeepers, artisans, even peasants—and yet for many years they have been monopolized by boys whose parents are well able to pay handsomely to educate them. At Eton, Winchester, and other schools a multimillionaire's son may even win and enjoy the benefits of a poor and needy boy's scholarship.

THE RESIDENCE TEST.

Of course, education at a public school is comparatively expensive even under existing conditions, the inclusive charges for Oppidans—and they comprise most of the students—at Eton, for instance, amounting to £230 a year, *plus* £21 entrance fee. But the charges only partly meet the cost, which is made up from endowments.

Sometimes the violation of the original object of the pious founders of our great schools is effected by means of a temporary residential qualification. Bedford, for instance, always numbers among its population many well-to-do people who live in it merely to take advantage of its educational facilities, which were intended only for the local poor. Such people reach the town when their children are ready for school, reside in it while they are attending school, and then depart. Among these birds of passage are many widows, some of whom are, in a sense, poor: but in general those attracted to Bedford by its school are well able to pay for education at the ordinary rates.

Similar exploitation is common at Rugby, Tonbridge, and other towns, which many people make places of residence while their sons are taking the birthright of local boys.

Prominent among the many schools thus abused is Winchester. William of Wykeham, the founder, enjoined that preference was to be given to "poor and needy scholars" who were sons of inhabitants of places where the college estates lay, next natives of the diocese of Winchester, then to the inhabitants of Oxford and other counties in the order he named, and, lastly, to the inhabitants of England. To-day, as Dr. Kitchin, Dean of Winchester, said, "those only, as a rule, eat Wykeham's bread whose parents are wealthy enough to be able to undertake the education of their own children," and there are no sons of poor men on the foundation.

ETON FOR THE POOR.

Equally conspicuous, from the same point of view, are Eton and Harrow. Eton was founded for the "poor and needy" boy, and while, by the original statutes, those who enjoyed riches or nobility were not excluded from the school, they were warned that if they attended it they were not to cause ill-feeling by vaunting their privileges over local boys.

But for a long time the school was filled by royal patronage, which was bestowed in the interests, not of the poor, but of the wealthy, and, though in the early part of the nineteenth century some of the collegers were nominally poor boys, for many years Eton has really been an expensive boarding school for the sons of rich men.

How little control there was over the foundation is shown in a report of the Public School Commissioners. Between 1842 and 1862, it is here stated, the Provosts and Fellows of Eton gained, by granting beneficial leases, £127,700, which they put into their own pockets.

Harrow was founded with the same object as Eton. The school on the hill was intended to be a free grammar school mainly for local boys, and John Lyon, its founder, laid down many rules and restrictions to that end. Some of these would, if applied nowadays, cause trouble. He provided, for instance, that at all seasons studies were to begin at six o'clock in the morning, continue till eleven, and then, after a break of two hours, be resumed till six in the evening. Further, play was not to be permitted "except on Thursdays only, sometimes when the weather is fair, and on Saturdays or half-holidays, after evening prayer".

SHOULD RUGBY BE FREE?

But Lyon, careful as he was, made one slip. To enable the master to add to his modest salary he put in this clause: "The schoolmaster may receive, over and above the youth of the inhabitants within this parish, so many foreigners as the whole may be well taught and applied and the place can conveniently contain; and of these foreigners he may take such stipend and wages as he can get."

That was fatal. Ultimately the "foreigners" (rich young English boys for the most part) squeezed out the "youth of the inhabitants within this parish," who have now no accommodation whatever in the great school. The trustees, however, maintain a cheap day-school for local children.

Similar in broad detail is the history of the Charterhouse. Its founder, Thomas Sutton, intended it for "poor scholars," and ordained: "No children to be placed there whose parents have any estate or lands to leave unto them, but only the children of poor men that want means to bring them up" This is definite enough; but Charterhouse has numbered among its scholars many boys whose parents were not such as Sutton would have considered lacking in "estate or lands".

Rugby was founded as a "free grammar school to serve chiefly for the children of Rugby and Brownsover and next for such as be of other places thereunto adjoining." The founder made no provision for wealthy or aristocratic "foreigners". About the middle of the eighteenth century, however, the school ceased to be free to all scholars, and under Dr. Arnold, who was its headmaster from 1828 to 1842, it attained a national reputation as a public school.

A STRANGE DEFENCE.

Many other schools have undergone essentially the same transformation, though on a smaller scale. Felsted, Sherborne, Tonbridge, Uppingham, Repton, Sedbergh, Giggleswick—these and their like, all founded for the benefit of poor boys, have become exclusive, and have long ceased to be factors in popular education.

In defence of this transference of endowments from the poor to the rich some strange contentions have been put forward. The oddest, perhaps, was one gravely urged about fifty years ago by a commission, which declared that the boys then at Eton—and they belonged to the same class as those there now—were "poor boys". Perhaps they were. But the proper meaning of "poor boys" is the meaning in which the term was used by the founders—the sons of poor parents.

Tobacco-Growing in India.

One of the subjects on the agenda at the last Agricultural Conference at Pusa was the improvement of Indian tobacco. There is, as the Agricultural Adviser pointed out, a great demand for a cigarette tobacco possessing the flavour of the imported Virginian cigarette. The varieties of tobacco indigenous to India give a somewhat coarse leaf which, to some extent, meets the local requirements. The demand, however, for tobacco of a finer grade

is increasing. In 1925-26 India imported unmanufactured tobacco and cigarettes, cigars, etc., to the value of Rs. 213 lakhs, in the same year exporting tobacco to the value of Rs. 111 lakhs. Cigarettes from three-fourths of the imported tobacco, and of these all but a negligible percentage come from the United Kingdom.

Of the exports, unmanufactured tobacco accounts for Rs. 105 lakhs, the share of the United Kingdom last year being Rs. 28 lakhs, a proportion which compares with only Rs. 16 lakhs worth shipped to the British market three years ago. Of manufactured tobacco valued at over Rs. 6 lakhs shipped from India in 1925-26, the British purchases did not exceed one-tenth, the Straits Settlements taking Rs. 2 lakhs and other countries the balance.

The position as envisaged by the official agricultural experts is, says a writer in the *Times Trade Supplement*, that while the possibilities of developing the export trade, particularly with Great Britain, are greater now than ever before, as Great Britain has reduced her import duties on Empire-grown tobacco, the type for which there is a keen demand abroad is Virginia, to which India should therefore devote most attention in any effort to improve the status of the tobacco-growing industry.

Tobacco Bureau Recommended.

With this purpose in view the Pusa Conference adopted the report of a special committee which, after taking much evidence, recommended that a tobacco bureau be established at Pusa with the imperial economic botanist as secretary, and that a curing expert be engaged by the Government of India to work in collaboration with the former. This method of starting the bureau was recommended as involving the minimum initial expenditure. Subsequent expansion would depend on the experience gained during the first few years of working. The committee also urged that the imperial agricultural chemist, in collaboration with the bureau, should carry out a chemical investigation of the changes taking place in the leaf during curing and manufacturing.

The committee further recommended that the functions of the bureau should be as follows:—The collection and maintenance of types of indigenous and exotic tobaccos; the testing of various types with regard to yield and quality of leaf; the improvement of existing types by selection and hybridization; distribution of seed of improved and selected types to provincial departments of agriculture; the investigation of different curing methods, and the possibility of introducing in India flue curing and fire curing by means which come within the resources of individual cultivators or of co-operative societies; the investigation of the influence of cultural and manurial methods on the quality of the leaf; the training of assistants for the provinces in methods of tobacco culture and curing; the dissemination of information; the collection of statistics.

In this last connection, the committee draw attention to the fact that in the Government of India's published "Estimates of areas and yields of the principal crops in India" tobacco does not at present find a place. It is considered that in view of the increasing importance of the tobacco crop this omission should be rectified. The committee were impressed by the description of the methods adopted by commercial firms in certain provinces in dealing directly with the cultivators in the matter of the distribution of the seed and the direct purchase of the standing crop, and they recommended this method to the attention of the trade in those provinces where it has not yet been adopted.

India's Chance.

Finally, the committee considered that in two respects some useful collaboration might take place between the tobacco bureau at Pusa and the Imperial Forest Research Institute, first, in testing the effect of the various Indian woods in connection with the firing method of curing tobacco; and, second, in the discovery of indigenous timbers which might be suitable for the manufacture of the hogsheads used in the export of tobacco, the timber for which has at present to be imported from abroad.

The chairman of the committee, in urging the adoption of its report, claimed that India stands a "good chance of capturing a large part of the trade at present carried on by the United States". In a note dealing with the cigarette industry and the development of the export trade, the officiating imperial economic botanist pointed out that the increasing demand for cigarette tobacco indicates a direction in which the improvement of Indian tobacco should proceed. As an example of the increased consumption of this type of tobacco he mentioned that in 1914 the cigarette industry in the United States consumed 50,000,000 lbs. of tobacco, and in 1921 this quantity had increased to 160,000,000 lbs.

It is, in the opinion of the imperial economic botanist, in connection with the cultivation of American types of tobacco that there are great possibilities for the improvement of the tobacco industry in India. The cultivation of American varieties of tobacco is being carried on at Guntur, where there is a large factory. The types of American tobacco which have proved most successful there are Adcock and White Burley. The former is one of the best cigarette tobaccos, and at Guntur this tobacco grows well and cures to a bright colour comparing not unfavourably with leaf produced in America. Both Adcock and Burley tobaccos have been tried in the Botanical Section at Pusa, the latter proving the most successful, and curing to the colour and flavour which are characteristic of this tobacco as produced in Kentucky.

Type of Leaf Required.

The experience at Pusa has been that these exotic varieties are more delicate in the seedling stage than the indigenous types, and it is possible that the best results from these foreign varieties will be obtained by crossing them with some local type. It is considered, therefore, that acclimatization and hybridization of American varieties of tobaccos offer a large field for the improvement of the cigarette tobacco industry in India. At the same time it is by the cultivation of these types that the export trade can be profitably expanded.

At the present moment about 86 per cent of the world's export trade in tobacco is from the United States, while of the world's import trade about 30 per cent is to the United Kingdom. The preferential rate of 1*s.* 6*d.* of the prevailing Customs duty granted

by the United Kingdom to tobacco produced in the British Empire would greatly favour tobacco exported from India if the right grade of tobacco could be produced in this country. The type of leaf required for export is the same as that required for cigarette manufacture—namely, a bright leaf having the colour, flavour, and texture of that which is commonly called Virginian.

The obstacles in the way of producing this type of leaf in India are: (1) The difficulties incidental to the acclimatization of any exotic variety; (2) The necessity for a change in local methods of curing. Some system of rack-curing appears to be essential if leaf is to be produced without the objectionable flavour which has hitherto been characteristic of India cigarette tobacco.

Deforestation and its Effects.

An important and valuable contribution appears in the Journal of the *Jamaica Agriculture Society* for July 1926, extracted from the *Californian Countryman*, on "Deforestation and its Effects". The article in question brings forth the disastrous consequences that inevitably attend deforestation.

In quoting history for positive proofs, there is a very significant remark on the dearth of forests and what its consequent effect was on the places where the havoc of deforestation was allowed to have its own course. Deforestation of all countries along the north coast of Africa, at a certain time the granaries of the Roman Empire; Palestine, Mesopotamia, Sicily and China, once fairy glens of magnificient forests and prosperous people, are now merely barren or wild desert-wastes. The reason is not far to seek. First of all,

"The wealth and power of any country comes chiefly from the soil and its continued prosperity depends upon an adequate supply of water. When forests go, fishes and games go, crops go, flocks go, herds go, fertility departs—then the age old phantom appears, stealthily one after another, floods, drought, famine, pestilence".

How water supply is dependant on forest growth is made illuminating and understandable when we read the scientific report of great engineers which show that 88% of the rainfall will be absorbed by the forest beds of thick humus and leaves, and what is more important it takes generally 27 months for its proper distribution under normal condition. When we annihilate these water-conserving forest areas, either by fire or cutting 92% of the rainfall runs or oozes off taking in its trail fertile soil and silt. In America destroying hands have laid low 5/6 of its moisture retaining forests with the unhappy result of destructive, death dealing floods followed by immense losses of property and sterility of agricultural lands. The reason for disastrous floods and long spells of water famine on account of lack of rainfall can be straight away traced to destruction of forests.

The only way of curing the deforested areas is to reforest them, since forests have a bearing "upon every phase of human activity—social, commercial, industrial" and from without dispute a nation's "most vital economical asset".

Banking Facilities in India.

The Report of the Royal Commission on Indian Currency and Finance have a direct bearing on the question of credit facilities in India. One of their recommendations relates to increased facilities in Banking. A writer in the *Times* gives some indication of the nature and scope of present or contemplated inquiries may therefore be given usefully at this stage. They are based on the broad general fact that banking facilities in India are notoriously inadequate, though they have undergone substantial expansion in recent years. The total deposits in the Imperial Bank of India, in exchange banks doing a considerable portion of their business in India, and in Indian joint stock banks, increased from Rs. 96 crores in 1915 to Rs. 210 crores. To the latter figure the Imperial Bank contributes 40 per cent, the exchange banks 34 per cent, and the joint stock banks 26 per cent.

The Imperial Bank of India, established in 1920, has now completed its undertaking to open 100 new branches, chiefly in towns without banking facilities, within five years. Yet to-day banks are to be found only in about 250 of the 700 urban areas in India possessing a population of 10,000 and upwards. No fewer than 450 towns and over 700 000 places with populations of less than 10,000 are without banking facilities other than those provided by the local *bania* or money-lender.

Survey of the Field.

The External Capital Committee which sat last year under the chairmanship of Sir Basil Blackett pointed out that India possesses a vast store of dormant capital awaiting development, and that in order to make this available for investment banking facilities must be increased and extended. The examination of the various technical measures required for the purpose was held to be outside the scope of the committee, but it emphasized the importance of a co-ordinate survey of the whole field of banking in India being undertaken at the earliest opportunity. "This should be followed," it was observed, "by a detailed examination by an expert committee or committees of the lines along which progress should be effected."

The survey proposed has been undertaken by the Government of India in consultation with, and with the assistance of, local governments and others. The subjects coming within the scope of the survey are many. They include the question of co-ordinating the indigenous banking system, which is of very old standing, with the more modern Western methods of banking, and of linking both with a central banking institution. As was pointed out by Mr. A. C. McWaters, Secretary of the Finance Department, in

the Council of State in the spring, the position of the Imperial Bank of India has to be considered in this connection; the question of competition between it and other joint stock banks, "is a very important and difficult question".

A cognate subject is that of improving the law relating to negotiable instruments. The Government is considering at the present time one aspect of the law namely, that of maintaining the character of documents drawn to bearer irrespective of endorsements. On the same occasion Mr. McWaters announced that steps are being taken to set up an Institute of Indian Bankers with a view to providing adequate training within the country. The Imperial Bank has engaged about 200 Indian probationers, in the expectation that as these gain experience and prove their capacity, a considerable proportion of them will be available as branch managers in centres which would not be likely to repay the cost of a European staff. Obviously, there must be a supply of trained Indian bankers before there can be any great extension of banking in the country. The Government has also under consideration the question of improving clearing-house facilities.

AGRICULTURAL CREDIT.

While such subjects are under survey, another Royal Commission, that on agriculture, will begin its work in the late autumn, and will deal with various questions affecting banking facilities. It will take up, of course, the question of co-operative banking, and also that of creating land mortgage banks. The co-operative credit societies in 1915-16 held deposits and loans to the extent of Rs. 134 crores, while in 1924-25 the figure of Rs. 1,246 crores was reached. But this is still no more than an instalment of the beneficent possibilities of the provision of agricultural credit by means of rural co-operation. The returns, it should be noted, do not take account of co-operative banks with a smaller capital and reserve than a lakh of rupees.

The motion of which the Secretary of the Finance Department was speaking recommended the setting up of an inquiry "into the question of the desirability of legislating with a view to placing Indian banking on a sound footing." Mr. McWaters, urging that some time must elapse before more material could be available for such an inquiry, suggested adjournment of the discussion on the resolution, and this was agreed to. The Indian Legislature meets in August at Simla, and it may be expected that the arguments for inquiry will then be revived. There are indications in the answers of chambers of commerce to an official memorandum on the subject that some observers hold strongly that a full and authoritative investigation should be initiated in the coming cold weather.

American Trade with India.

The following statistical matter is based on table received from the Department of Commerce, Washington, D. C.:—

Exports and Imports.

Total exports from the United States, June 1926	$338,000,000
Total imports into the United States, June 1926	$337,000,000
Excess of imports over exports ..	$ 1,000,000

Trade with India.

Imports from India to the United States, June 1926	$ 11,890,000
Exports to India from the United States, June 1926	$ 4,126,000
Excess of imports over exports ..	$ 7,764,000

Some of the more important items *exported* from the United States to India during June, 1926, were as follows:—

Raw cotton	2,347,000	pounds.
Dyes	237,000	,,
Kerosene oil	5,060,000	gallons.
Lubricating oil	788,000	,,
Machinery, all kinds ..	$463,000	
Tinned sheet and plate ..	21,000	pounds.
Galvanized sheet and plate, iron and steel	300,000	pounds.
Tubes, pipes and fittings ..	4,731,000	,,
Bolts and nuts	75,000	,,
Automobiles (American) ..	216	
Automobiles (Canadian) ..	310	
Trucks (American) ..	116	
Trucks (Canadian) ..	251	

Note:—Total exports of automobiles from the United States during June were 15,354 and trucks 4,580. Total exports from Canada during June were 2,979 cars and 1,562 trucks.

Some of the more important items *exported* into the United States from India during June 1926 were as follows:—

Burlaps	37,819,000	pounds
Jute, raw	2,000	tons.
Cotton, raw	2,524,000	pounds.
Goatskins	3,530,000	,,
Shellac, all kinds lac ..	1,751,000	,,
Mica	600,000	,,
Castor seed	9,183,000	,,
Manganese ore	3,000	tons.
Myrabolams	1,000	,,
Carpets	26,000	sq. ft.
Wool	513,000	pounds.

Trade with Ceylon.

Imports to United States from Ceylon, June 1926	$3,257,000
Exports to Ceylon from the United States, June 1926	$ 275,000
Excess imports over exports ..	$2,982,000

Exports from the United States to Ceylon included 53 automobiles, 22 trucks and 65,000 gallons of lubricating oil. Imports from Ceylon included 1,600,000 pounds of tea, 1,453,000 pounds of cocoanut products, and 4,796,004 pounds of rubber

Books in Brief.

Short Reviews of Recent Books.

An Economic History of England, 1066-1874.

By Charlotte M. Waters. Oxford University Press, London and Bombay. Price 7*sh.* 6*d.*

Charlotte M. Waters deserves to be warmly congratulated on the production of this book. It is, in many respects, well conceived and well written. Its statement of facts is, so far as we have been able to gauge, correct, care having been taken by her to present carefully disputed questions. A book such as this has been for long a great desideratum in India. It combines both industrial and economic history and as such ought to prove suitable for use in our College classes. The primary difficulty felt by teachers of English Economic History in India is the generally abstract character of the books dealing with the subject. Indian students require a book that gives a more living picture of past and present conditions in England, and how the latter have been brought about. The authoress has caught the right spirit; her delineation of changing conditions is such as to convey the right impression to Indian students. Of the illustrations which form so leading a feature of this book, it is wholly difficult to write lightly. They go to make up the book in no ordinary sense. They give an idea of the vast changes that have transformed rural England into industrial and commercial England. Their unique character deserves to be noted even in a brief review of the present kind. They number 595 in all which in itself ought to indicate their character and content. We agree that the authoress is justified in thanking Mr. J. de M. Johnson for the loving care he has bestowed on his work of selection, which is not only representative in every sense of the term but also instructive to a degree. The book deserves the attention of University Boards of Studies in India.

Money and the Money Market in India.

By P. A. Wadia and G. N. Joshi. Messrs. Macmillan & Co., Ltd., London. Price 21*sh.* net.

A book dealing with money and the money market should, at the present moment, be formed a timely publication. The authors, who are already well-known by their joint work, *The Wealth of India*, have done an useful piece of work in turning their attention to this question. Some idea of the scope of the work may be obtained when it is stated that it deals in a critical and constructive spirit with the early history of money; its functions; the qualities of the money material; the problem of the Standard, rendered highly interesting by the recently issued Report of the Indian Currency Commission; value and quantity of money; the equation of exchange, currency systems, paper money, credit and prices, banking, history of Indian currency, Indian currency experiments; gold exchange standard, gold exchange standard in India, gold standard reserve, currency policy: history of Indian paper currency, Imperial Bank of India, Government and the banks; Post Office Savings Bank and cash certificates; co-operative banks; insurance companies and stock exchanges; indigenous banking, Indian banking; general features and defects, adequacy of the money market in India; stability of the money market in India, etc. In the last chapter of the work, the authors offer their concluding remarks to which we would invite special attention. They suggest that there is no reasonable doubt about the fact that the supply of purchasing power in India is far from sufficient to the demand. They, therefore, demand an adequate supply of currency to satisfy the requirements of the trading classes in this country. They desire, in a word, a system of currency that is elastic enough to expand or contract as trade conditions might require. They prefer a "managed" currency. They would desire such a currency based on a gold basis. They thus favour a pure and an effective gold standard. They are, therefore, plainly against a Gold Exchange Standard. They suggest, further, a comprehensive monetary system to increase the productive powers of people of this country "operating through the development of banking". The authors have produced a work which, giving as it does much valuable matter in a handy and well-written volume, will long be a useful guide not only to the currency reformer and critic in this country but also to that wider public which takes an intelligent interest in the economic progress of the Indian people. As a real contribution on the subject of Money in India, it ought to be on the shelves of every public worker in this country.

The Empire Commercial Guide.

Edited by W. C. Hart-Synby. The British Commonwealth Trade Press, Ltd., 212, High Holborn, London, W.C.1, England. Price 21*sh.* net.

This book cannot be better described than in the words of its Preface, which states *inter alia* that it "has been compiled to meet the demand for a work of a comprehensive kind, containing within one handy volume, information concerning the commercial and industrial life of the British Empire Overseas." The book is well compiled and well printed and is handy to a degree though heavy to lift. The Index deserves improving in the next edition. "India" by itself does not appear in it, though shown under minor heads and though Part II is devoted to it and the Far East. The notes too may be a little more exhaustive. 'Parp" on page xvi is a mistake for "Pact". This deserves correction in the next Edition. The price of 21*sh.* net per copy seems prohibitive for the book. If the publishers desire anything like a larger circulation for their publication they would do well to price it at as low a figure as may be possible. They ought to know that "Pears' Cyclopædia" and the "Daily Mail Year Book" sell incredibly well because of their low price and good contents.

International Law in Ancient India.

By S. V. Viswanatha, M.A., Lecturer in History and Economics, National College, Trichinopoly. Longmans Green & Co., London, Bombay and Madras. Price 10*sh.* 6*d.* net.

This is an admirably written treatise dealing with a subject of supreme interest. The author's reading of the original authorities has been wide and comprehensive. The clearness and perspicacity which characterize Mr. Viswanatha's writing are not the least among its merits. In dealing with International Law, the author has broken new ground. As may be expected, it is based on the *Artha* and *Niti*

Sastras, and the *Mahabharata* (Santiparva), the *Ramayana*, *Manu*, etc. He brings out clearly the fact that in ancient India warfare was conducted on well-understood and humane lines, that it was essentially based on principles of *Dharma* appreciated by both the combatant parties; and that the basic ideal that all war is meant for securing lasting peace had been clearly grasped very early in this country. Mr. Viswanathan's account of the treatment accorded to non-combatants is, we see, mainly based on Megasthenes. Manu directly supports the statement of Megasthenes in VII, 92. It is recorded that when Chalukya Vikramaditya II captured Kanchi, the Pallava capital, he (apparently in accordance with Manu's injunction) spared the City and that "having made the twice-born, the distressed and the helpless rejoice by continual gifts, he acquired great merit by granting heaps of gold to the temple of Rajasimheswara," the present Kailasanath temple at Conjeeveram. Compare his conduct with what Manu says (VII, 201):— "Having conquered a country, let him (the conqueror) respect the deities adored in it and the virtuous Brahmanas, let him also grant immunities to the people and publicly proclaim safety to all." Altogether the book is a valuable contribution to our knowledge of ancient India, especially on a topic which has so far received little or no attention. Incidentally it sheds useful light on obscure points cropping up frequently in inscriptions relating to conquests of territory by kings or their treatment of conquered areas. It ought to find a place on the shelves of every student of Ancient Indian history.

New Books For Sale.

	Rs.	a.
Industrial Problems and Disputes.—By Lord Askwith ...	15	12
The Budget and Responsible Government.—By Frederick A. Cleveland and Arthur Eugene Buck ...	12	12
Modern Tariff History.—By Percy Ashley, M.A. ...	12	12
Labour and Capital after the War.—By Professor S. J. Chapman, C.B.E....	1	0
Principles and Methods of Taxation.—By G. Armitage Smith, D.Litt. ...	3	12
The Revival of Marxism.—By J. S. Nicholson, D.Sc., LL.D ...	3	12
Value for Money.—By W. Schooling, C.B.E. ...	3	12
Indian Finance and Banking.—By G. Findley Shirras ...	13	8
Instincts in Industry.—By Ordway Tead ...	4	8
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Detailed Contents.

PAGE

MYSORE CO-OPERATIVE CONFERENCE—
By Mirza Mahomed Ismail, B.A., C.I.E., O.B.E., Dewan of Mysore .. 463

CO-OPERATION IN BOMBAY—
By His Excellency The Governor of Bombay 466

TOURIST TRAFFIC—
By S. R. Palyam, B.Com. .. 470

ORGANIZATION OF HAND-LOOM INDUSTRY AND TRADE—
By K. S. Rao, L.T. M., Textile Expert to the Government of Bihar and Orissa 474

CANADIAN TRADE AND FINANCE .. 477

ECONOMICS IN THE WEST .. 481

AN ELECTRICAL LETTER 485

NOTES FROM LONDON 487

ECONOMIC NOTES 490

TOPICS IN THE JOURNALS .. 494

BOOKS IN BRIEF—
Memorandum on Production and Trade 499

PAGE

Memorandum on Balance of Payments, and Foreign Trade Balances, 1911-1925 500

Industrial Conditions and Labour Legislation in Japan 500

Economic Life in a Malabar Village 501

Currency and Central Banking .. 501

Economic Development 501

The Co-operative Reader 501

South Indian Gilds 502

Temples, Churches and Mosques .. 502

The Brinjal, its Culture and Culinary Uses.. 502

ACKNOWLEDGMENTS 502

ARTICLES IN THE JOURNALS .. 502

SUPPLEMENT—
Universities: What They Are and What They Should Be.
By Sir P. C. Ray, Kt. 1–9

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Mysore Co-operative Conference.

By Mirza Mahomed Ismail, O.B.E., C.I.E. *
Dewan of Mysore.

It is a great pleasure to me to be associated with you to-day. I owe the privilege to my friend Rajakaryaprasakta, Rao Bahadur M. Shama Rao, the father of the Co-operative Movement in Mysore and appropriately, the President of the Mysore Co-operative Propagandist Institute. When Mr. Shama Rao asked me some days ago to open this Conference with a few remarks, my first inclination was to decline the invitation as I was afraid I would be too busy, but I felt that, if I did so, I would be depriving myself of a welcome opportunity of giving public expression to my profound belief in the Co-operative Movement and to the high value I place on the work of those who are engaged in its development.

The Address which Mr. Shama Rao has just read on behalf of the Conference contains some very kind and generous remarks about me and the work I am endeavouring to do. These friendly and earnest good wishes are to me a real help and inspiration, for they come from men who themselves deserve well of their country and are uttered by one of her wisest and most strenuous servants. In being with you, Gentlemen, I feel this special happiness, that our brotherhood is that of action, not of mere sentiment or word. All that we truly feel and know has come to us in the actual effort to do good, without which no man can truly understand anything; and it has value only in so far as it enables us to work harder and more wisely. I cannot voice to you the earnestness with which I desire to do some lasting service to His Highness and his people during the time allotted me—to forget everything, to be entirely forgotten, if only by such definite means as those you stand for, they may become happier, wider in outlook, freer from stunting anxieties and from the petty cares and purposes that close them in and dim their vision. I know that we who are met here are one in this hope and purpose, and this is why I so sincerely thank you for words that are, in effect, a pledge of unwavering co-operation with me.

It seems to me that Co-operation is a manifestation of the change in spirit which has come over the business world during the last century. The change, as I understand it, is mainly in the direction of considering individual interests in relation to the common good. This, I take it, is what is meant by co-operation as opposed to competition. The change is far from complete even in the West where it first manifested itself, and in this country the movement is barely 20 years old. Yet its progress has been phenomenal. A perusal of the reports of the Co-operative Department in the various Provinces of India will show what congenial soil the movement has found in this country.

In Mysore, where capitalists able, ready and willing to undertake large business enterprises on Western lines are lacking, the successful development of the Co-operative Movement appears to me to be the only means of developing the resources of the State. The progress we have achieved during the past 20 years gives me every hope for the future. We have about 1,600 co-operative institutions working in different parts of the State, with a membership of 96,000 and a working capital of Rs. 98½

* Speech delivered at the opening of the Thirteenth Mysore Provincial Co-operative Conference held at the Rangacharlu Memorial Hall, Mysore, on Monday, the 11th October 1926.

lakhs. The mere figures may not mean much but when we remember the steady, persistent, and unselfish efforts of those who have produced these results, the figures are significant of what earnest and concerted endeavour can perform.

A general survey of the Co-operative Movement in the State appears to me to show that its development has been rather one-sided. Nearly all our societies are credit institutions. I am aware that we have some societies of a non-credit type: also that several credit societies undertake other functions. Yet the fact remains that, in the main, our development has been a development of credit. I am far from discounting the importance of credit which is certainly the primary need of our agriculturist. But the provision of money is not by itself of much use to him. Indeed, I can conceive of its being a positive harm. The raiyat does not want money as money. He wants it to buy cattle, ploughs, implements, manure, seed and the like. You have got to give him facilities in these matters by the formation of agricultural supply societies of various kinds. Next, he wants facilities for marketing the raw produce raised by him to the best advantage, and this is possible only through agricultural sale societies. If he wishes to go a step further and convert his raw produce into a finished product, he will enter upon the domain of Industrial Co-operation.

I have heard it said that with the present general level of intelligence, the scope for industrial co-operation is very limited This may or may not be so. I do not wish to express an opinion. But, in any case, I think the time has come for you to take up the development of agricultural supply and sale societies side by side with credit societies. Without such harmonious development, your work will be incomplete and possibly harmful. I find that this is one of the subjects which you propose to discuss at this meeting and I hope that your discussions will result in a definite and practical scheme.

Mysore was, I believe, first in the field in the matter of Co-operative House-Building But for some reason, of which I am not aware, this early promise has not been fulfilled. The wholesale destruction and damage caused by floods in recent years has given a new stimulus to this activity. But I do not know if this is going to be a permanent feature of our work here. It is true that the overcrowding that in the West stimulated effort towards co-operative house-building activities is less prevalent in this country; but the insanitary and, very often, the squalid surroundings in which the bulk of our population live, ought surely to provide a similar incentive. I firmly believe that clean, sanitary and healthy surroundings directly lead to purity of life, and it is the business of every public-spirited individual to try and secure such surroundings for his fellow-citizens. I have in my mind at the present moment not so much the improvement of cities like Bangalore or Mysore, which involves heavy expenditure, but of the villages. The mildness of our climate and the simplicity of our requirements are all in our favour and render the investment of large amounts for the improvement of individual villages unnecessary. I am aware that considerable difficulty is likely to be experienced at the beginning. But so it was in the case of the credit society and if difficulties had daunted the pioneers of the movement in their earnest and persistent efforts, they would not have made such progress. Their success surely should be an encouragement to us. It should be our aim to convert our ugly and unhealthy villages into attractive and healthy ones, consisting of houses simply built- but with play grounds, schools, co-operative societies, places of worship, and other public institutions. House-building co-operative societies can do a great deal towards this transformation and I shall be glad if this question receives your attention.

A point on which I should like to lay some emphasis is that your institutions ought to serve as a powerful means of promoting that well-known, though little practised, quality—thrift. Co-operative societies are essentially institutions meant for the promotion of thrift and I am aware that this is included among your objects. But I should like to see every society recognize it as an active part of its normal work, to organize house-to-house campaigns in its behalf.

I trust you will include in your active programme the problem of reaching the depressed classes The strength of a chain is judged by its weakest link, and so long as the depressed classes remain what they are, there can be no general uplift of the country. If it is to progress, you must take them with you. This will involve earnest and intense effort on your part, and I can assure you, on behalf of Government, that they will be prepared to help you in all possible ways.

I believe I am right in thinking that the relief of agricultural indebtedness is a problem that has long been under your consideration.

I understand that some attempt was made to tackle it by means of co-operative societies and that on the whole, the attempt was unsuccessful. That, I think, was inevitable, because co-operative credit societes are not the right type of institution for the provision of large or long term loans. In the recent orders which Government have passed on Malnad Improvement, they have indicated their intention to entrust the redemption of agricultural indebtedness to Land Mortgage Banks; and they propose to start three such institutions in the malnad districts of Shimoga, Hassan and Kadur. As the scheme is fully described in the Government Order, I shall not go into its details here. But I should be glad if you would discuss this subject at this meeting and favour Government with your well-considered opinion.

One of the features in the working of the Co-operative Movement in Mysore which causes me some concern is the large increase during recent years in the number of co-operative disputes. I should have thought that if loan applications were carefully scrutinized, the purposes of loans approved, the trustworthiness of applicants established, and the actual utilization of loans watched, there should be little or no room for disputes in co-operative transactions. Yet such disputes have been numerous. This would seem to indicate a certain amount of slackness in the management of the societies in which these suits arise. Societies thus managed are a blot on the fair name of Co-operation and I would ask you to deal faithfully with the matter.

Another question to which I would ask you to give your immediate attention is that relating to the supervision and inspection of co-operative societies. This work, as you are aware, is performed at present almost entirely by the Co-operative Department, consisting of the Registrar and his staff. This staff has been increased from time to time as the need arose. At the present moment there is a proposal for such increase pending before Government, and I have no doubt it will receive every consideration at the hands of my colleague the First Member of Council. But you will recognize that Government cannot go on adding to the cost of the Co-operative Department. It seems to me that the time has come when you should come to the help of Government in this matter. The question, I find, has been carefully worked out by the Mysore Co-operative Committee, who have given in their report detailed suggestions for the formation of a non-official staff. Before Government pass orders on the Committee's scheme, they would like to have your opinion.

Gentlemen, I am afraid I have taken up more time than I intended. I shall conclude my remarks with a few observations on the Mysore Co-operative Propagandist Institute, under whose auspices this Conference meets to-day. I whole-heartedly welcome the formation of this Institute and I foresee for it a bright future. A central institution for co-ordinating all co-operative activities in the State, for undertaking propaganda, for publishing bulletins and magazines, for holding lectures, training classes and the like, has been a long-felt want in the State; and the Central Propagandist Institute meets this want. One of the most useful services which it can render to the Co-operative Movement is to act as a permanent committee of this Conference and see that the decisions which you arrive at are brought into operation. I would like that your decisions should be tabulated and referred by the Institute to co-operative societies, the Registrar, or the Government as the case may be, for necessary action. The result of the action taken should be noted and reported at the next meeting of the Conference. This will be a continuation of your work here, and will prevent your decisions from being mere pious hopes. The Institute has secured in Rajakaryaprasakta, Rao Bahadur Mr. Shama Rao, a President, who, by temperament and experience, is admirably qualified to start it on its career of usefulness and public service, and I have every hope that under his able guidance it will grow into a flourishing and responsible centre of co-operative activities.

I now declare this Conference open.

A somewhat unexpected conclusion has been reached in a statistical survey of the health of 5,031 students of the University of Minnesota (U.S.A.), which is summarized in *The Bulletin of Hygiene*. Places of residence were grouped as villages (50-1,000 population), towns (1,000-5,000), small cities (5,000-50,000), and large cities (50,000 and over). The majority of ailments and defects recorded were found to be more prevalent in villages and rural areas, and less frequent in large cities. This is opposed to preconceived ideas, as it is generally supposed that people coming from the country are of healthier stock than those who are town-bred, owing to the advantages enjoyed in regard to purer air and more sunlight. The above results, if confirmed, are a tribute to present urban health practice in hygiene.

Co-operation in Bombay.

By His Excellency The Governor of Bombay.*

I have great pleasure in coming here to-day to inaugurate the 15th Bombay Provincial Co-operative Conference on this historic occasion. I call it a historic occasion, because you have fixed the date of the Conference so that it coincides with the Poona Agricultural Show, which is the biggest Exhibition of its kind so far attempted in India, and with the visit of the Royal Commission on Agriculture, which, we believe, will be productive of immense benefit to the future of this country. Co-operation is indissolubly linked with agriculture, and public attention will on this occasion be focussed in no small degree on your deliberations; and it gives me much pleasure to see before me such a very representative gathering of members and delegates from all parts of the Presidency.

The last time I attended the Conference was to inaugurate this annual meeting in the first year of my tenure of office, and on that occasion I expressed my very great sympathy with the Co-operative Movement. I have since tried to demonstrate that sympathy, both in the attention which my Government has given to co-operative progress, and in my visits to co-operative institutions during my district tours and on other occasions. You will perhaps recall my two visits to the model agricultural society at Hadapsar, near here, on the second of which I accompanied His Excellency the Viceroy, who testified to his belief in the movement in such eloquent terms.

To you who are gathered here to-day under the auspices of the Central Co-operative Institute, the foremost event of the year has been the revision of its constitution. The main feature of this revision is that it will now be constituted on a broad democratic basis, the main representation being that of primary societies, who will have a large majority on the Boards of Management; there will also be decentralization by the formation of District Branches, which will be designated Local Institutes. The Institute is thus now more akin to a Federation of Societies, as in other countries, than constituted on the lines of a single society as before.

As an instance of the democratic development that has taken place, instead of being *ex-officio* President of the Institute, I shall now be its Honorary Patron. The post of President is now open by election as one of the highest honours to which non-official workers in the Movement can attain, and I congratulate our veteran co-operator and much esteemed public worker, Mr. Devadhar, in being the first person to be elected. I wish to assure you all that I am as proud to be a Patron of your Institute as I was to be its President, and that my sympathy with its working, and my belief in its aims, will continue as before.

A special feature of the new constitution will be the "Provincial Co-operative Council", which will be the supreme board of management, and will consist of an exact and proportionate representation of all the primary societies in every part of the Presidency, of members to represent the District Banks, the Department, and the Divisional Branches elected in proportion to their importance, and of a sufficient number of co-opted members. This body, composed of some 100 members, and meeting at least twice a year, will to some extent perform the same functions as are now performed by the Annual Provincial Conference. The result may be that it will not be necessary to convene the Conference every year, and that its meeting at rarer periods will add to the importance and solemnity of the occasions. I have every hope that the "Provincial Co-operative Council" will not only secure the orderly development and supervision of every district and part of the Presidency, but will also act as the interpreter of non-official opinion. Its success will depend on the sacrifice of time and money which its members are prepared to make in attending its meetings, which will of necessity be at a distance from the homes of the majority, and I have no doubt that they will appreciate the importance of regular attendance.

We have always prided ourselves in this Presidency on the extent to which the Co-operative Movement is controlled by the non-official element. In 1921, my predecessor referred to the great burden which would fall on the tax-payer if it were necessary that Government officials should perform the duties of propaganda and supervision, which, after considered reflection, had been entrusted to non-official control. Since that time there has been an immense increase in the number of

* Speech delivered at the inauguration of the Provincial Co-operative Conference at Poona, on October 23, 1926.

societies, and universal development in every branch of the movement. My Government will continue to provide the due number of officials for the share of the work entrusted to them, and to contribute generously to the funds of the Institute, and I must appeal to you, as the representatives of the non-official element, to do your share. One of the criticisms which I have heard regarding the Institute is that it has not yet reached the villages and the outlying districts. I have nothing but praise for the long series of classes and conferences, for the educative work conducted through magazines, and the outdoor work done by some of the District Branches -as, for instance, West Khandesh -which are a feature of this year's working. I want, however, to see a thorough co-ordination of programme with special attention to outdoor work. I hope before long to see a living branch in every district, having as its members an enthusiastic body of workers, men who will visit, control and supervise every society in their district, and assist that loyal band of Honorary Organizers who have for so many years borne the major part of the burden; I should also like to see men who will devote themselves to research work and make that exact survey of the economic needs of their districts which will be of such help in determining the needs of the agriculturist and in the formation of agricultural non-credit societies.

The question of a closer relation between the primary societies and the central elements composed of the Central Banks and the branches of the Institute, has for some time been one of the chief problems to be solved. It is, as it were, the missing link in the system. We have decided that, so far as primary societies are concerned, the best policy is that of Supervising Unions, composed of groups of societies with due representation on them of the Banks and branches of the Institute. The primary societies will thus extend inward. The District Central Banks and branches of the Institute must extend outwards, the former by appointing more Inspectors and opening branches of their Banks, and the latter by active work through the district branches. Encouraging progress has been made during the last year in both directions. There are now 87 Unions. Much, however, remains to be done. I saw that Sir K. V. Reddi, the former Minister for Co-operation in the Madras Presidency, and the distinguished President of last year's Conference, alluded to the large sum spent by the Co-operative Unions on supervision in that Presidency, which was 36 per cent of the Government expenditure, and contrasted it with the sum spent in this Presidency, and that he also alluded to the greater development of Unions in that Presidency. The Registrar will pay special attention to this branch of the work, and I hope he will be able to count on the active help of the Institute and the Central Banks.

I will refer to one more matter before I leave the subject of the Provincial Institute. I am informed that the question of paying for its fine building, which is a memorial to the pioneer co-operator, Sir Vithaldas Thackersey, is a matter of great concern. The building cost nearly two lakhs, and so far only Rs. 45,000 has been collected, payment of the remainder having been made by a loan from the Provincial Bank. The building was erected when prices were at their highest in Bombay, and when land had attained a fancy price. The repayment of this loan must remain a constant hindrance to the activities of the Institute. The President has issued a special appeal for subscriptions, and I should like to take this opportunity of associating myself in it, and of expressing my hope that it will meet with a generous response.

Before I deal with the general progress of the co-operative movement in this Presidency, I must refer to the great loss which it has sustained in the recent deaths of Mr. F. T. Nalavadi, a leading co-operator of the Karnatic, which has so far led the way in progress, and of Mr. R. M. Sane, a pioneer Divisional Honorary Organizer in the Central Division, who took such a leading part in the establishment of the movement in the Sholapur District.

The statistics of co-operative progress since 1924, when I was last amongst you, show a very remarkable development. The total number of societies has gone up from 3,670 to 4,560, their members from 3,57,298 to 4,47,808, and, most noticeable of all, the working capital from Rs. 620 lakhs to nearly Rs. 879 lakhs, last year's increase alone being no less than Rs. 167 lakhs. During these two years Agricultural Societies have increased from 2,869 to 3,868, and this although the policy has been one of consolidation. The working capital of these Agricultural Societies has increased from Rs. 198 to 315 lakhs, and they now hold a substantial reserve fund of Rs. 30 lakhs. I take this opportunity of paying a tribute to the work of your late Registrar, Mr. Madan, whose three years' period of office has been a record

of sound and uniform progress. He has been specially successful in developing the non-credit side of the agricultural movement. He has lost no opportunity of coming into touch with and ascertaining the views of every section of the public, and of cementing the cordial relations between the official and non-official elements. I may say that the vast sums now absorbed in the movement show that it contributes, in no small measure, to the economic fate of the province, and confers great responsibility on the Registrar in watching over its safe disposal.

The question of facile credit is an ever-present danger to the co-operative movement, and I must here touch on some of its less satisfactory features. The position of many of the canal societies in the irrigated areas of the Poona and Ahmednagar districts is still causing some degree of anxiety to us all. I recognize the work which has been done by the newly formed Bhimthadi Union of the Nira Societies. It is struggling with the heavy load of arrears accumulated by those societies which, it must be admitted, was caused partly by over-financing, and which it has not so far been able to reduce. Government are regarding its efforts with the utmost sympathy, and have contributed practical help in the form of a subsidy and the loan of an experienced officer. There is, however, another area in which there has been a wholesale deterioration of the agricultural credit societies. I refer to some of those in the Mutha Canal area near Poona itself. It is an unfortunate truth that in some cases funds have been mismanaged, wholesale advances have been made to unworthy members, and sums deposited by outsiders have not been repaid. Some of the societies are under liquidation, and in some cases agriculturists who were formerly prosperous will be heavily involved. The cases which I have mentioned form only an infinitesimal portion of the total number of agricultural societies in this Presidency, but I have considered it necessary to refer to them in order that I shall not seem to minimize the necessity of absolute integrity and the confidence which it produces, and the dangers which attend all co-operative effort when it is not accompanied by careful and responsible supervision and mutual trust amongst the members. To eliminate such cases, and to safeguard us against a future recrudescence of them, we need the constant supervision of Unions and an increase in the number of non-official workers, and I trust that we can count on the continued help of all those workers who are already enrolled in the movement.

I have already made a reference to the development of the non-credit agricultural societies. The most striking instance is the number of cotton sale societies. We have led the way in this respect in the Bombay Presidency, and some of the societies have aroused the admiration and attention of co-operators both in other provinces of India and in other parts of the world. All the societies together sold no less than Rs. 62½ lakhs of cotton during the last year. In Dharwar district, the Hubli and Gadag Cotton Sale Societies have grown in a remarkable degree, and it is estimated that the latter, during the last year, handled nearly one-sixth of the cotton brought to the Gadag market. The problem attending the development of these societies is that, when they reach large dimensions, they are brought into serious conflict with the middlemen or trade interests. In this respect the Gadag Society has been passing through a very critical period. It has had to contend with a wholesale boycott organized by the local agents and the middlemen. My Government have watched the struggle with sympathetic interest, and I have every hope that the Society will be able to win through. There is no part of the movement which needs greater loyalty, discipline and expert knowledge on the part of its members, and Government on their side will endeavour to help and advise in so far as this does not lead to interference with the ordinary freedom of trade.

The continued rapid development in Sind has justified the belief that it has provided a fertile soil for the Co-operative Movement. The institution of two Zemindari Banks and the organization of a large number of Taluka Development Associations in some districts, which contrasts with the absence of development in this line in many parts of the Presidency, and the success of several sale and seed societies, constitute some of the more recent achievements. Government have lately placed a sum of Rs. 2,000 at the disposal of the Sind Co-operative Institute for the appointment of a special officer for propaganda in the Sukkur Barrage areas.

Turning to finance I notice with satisfaction the continued expansion and sound management of the Provincial Co-operative Bank. Its share capital and its working capital are now over Rs. 9½ lakhs and Rs. 126 lakhs, compared with Rs. 8 lakhs and Rs. 95 lakhs in the previous year. It has recently made a new

issue of shares, the feature of which was that they were almost entirely taken up by societies. It is following the policy of giving a larger representation to its society shareholders. Every society borrowing from the Bank is encouraged to be a member, and during the last year it has made an important change in its constitution, by which representation on the Board has been given to Central Banks and primary societies directly financed by it. I am pleased to testify to the sound guidance of its Chairman, Mr. B. F. Madon, and the able work of its Managing Director, Mr. V. L. Mehta.

The Bank is in touch with all the societies which it finances by a system of competent Inspectors, and it has recently opened several new branches in Taluka headquarter towns. Mr. V. L. Mehta has been indefatigable in his tours round the district. Co-operators, I am sure, appreciated the honour recently conferred on his father, the veteran co-operator, Sir Lallubhai Samaldas, and I am glad that he is following in his father's foot-steps.

It is indeed no exaggeration to say that the Provincial Bank has always kept in view its obligations towards the primary societies which it finances, however remotely situated, and that it has a full sense of its responsibility for the development of agriculture. I think that it is largely due to its example that the last year or two has witnessed much improvement in the management of the District Central Banks. The Department has for some years unceasingly brought to their notice the necessity for an increased staff and more expert management, and this advice has been repeated on more than one occasion at your annual conferences. I am glad to know that the majority of Banks have begun to act on this advice, but I must observe that there are still a few cases where it has borne no fruit. It is surely axiomatic that the central financing agency, however active its managing members, and however great their knowledge of economic and agricultural needs of the district, cannot at this stage, when the universal existence of supervising unions is still far from being realized, keep in touch with and supervise the primary societies without a system of properly trained agents or inspectors. It is surely also equally axiomatic that they cannot safeguard and utilize to the full the large sums of money entrusted to their care without a sufficient and an adequately remunerated indoor staff. I am sorry to have to repeat this somewhat trite and well-worn advice but I should fail in my duty if I did not keep the subject constantly before you.

I am very glad to note the substantial progress made in this branch of the movement and to know that the encouragement given by my predecessor in office to the development of indigenous banking in his inaugural speeches of 1920 and 1921 and his confidence in the possibility of its achievement, has been justified to such an extent. There are 476 of these societies, compared with 385 in 1923. Of these, 47 are classed as Urban Banks, having a capital of over Rs. 50,000. These 47 Banks have between them a working capital of Rs. 155 lakhs, individual amounts in several cases being more than Rs. 4 lakhs. In Dharwar Town alone there are several such Banks, with imposing buildings of their own adjoining each other, which have given to the street the name of the "Street of Banks". In almost every case the larger Urban and People's Banks no longer have to canvass deposits from outsiders. They flow in of their own accord, and the funds of Municipalities and Local Boards are largely deposited in both Urban and District Central Banks. The confidence of the public has thus been secured. What I wish to impress on you to-day is that you have now built up a system which has imposed on you a very heavy responsibility, and you have a sacred duty to conduct these institutions on up-to-date banking principles. There will not be wanting many critics who will say that the large volume of deposits is due to the very high rate of interest offered and that the depositors are prepared to take a risk when they can obtain a disproportionately high return. You owe it to the vast number of small borrowers whom you serve, and to the best interests of the economic development of the country, to see that the rate of interest paid to depositors is, allowing for the obvious differences, adjusted to the rates prevailing in the outside money market, and that the rates of interest charged to borrowers are in consequence kept as low as possible. Further, it is obvious that, where there are several such institutions in one locality, no useful end will be gained by unwise competition. In passing, I would observe that we still have to attain our aim of having at least one People's Bank in every Taluka town.

The introduction of the cheque and hundi system by Co-operative Banks has shown satisfactory progress during the last two years. During the last year, the transactions in hundis and cheques exceeded 6 crores of rupees.

I would impress on you that the cheque system is not only educative and productive of a saving in time and money, but is also one of the best means of preventing fraud in the management of small societies. Its development is, then, a matter for deep consideration at a time when the rapid expansion of the working capital of the movement compels you to utilize every possible means of supervision.

I see from the list of subjects which you will discuss that you realize that the occasion is one for taking stock of your position, and of examining the service due to agriculture by the Co-operative Movement. The result of your discussions will be of more than ordinary importance, especially in view of the examination of such questions which is being undertaken by the Royal Commission on Agriculture.

I congratulate you on being fortunate enough to secure the very valuable services of Sir Manubhai Nandshankar Mehta as your President, and, with my sincere good wishes for the success of this Annual Conference, I now leave you to your deliberations.

Tourist Traffic.

By S. R. Palyam, B.Com.

The craze for attracting tourist traffic in all countries of the world is going on ahead rapidly since the close of the war. The easy way in which the wealthy, pleasure-bent foreigner spends his money, has drawn the attention of several enterprising Railway Companies and the business firms of European countries to make all possible facilities for these people to go to their countries. The success of these tours depends on the comforts given by the transportation agencies, *viz.*, the shipping and Railway Companies aided by the natural scenery or the historical interest a country can boast of. Countries like Italy, France and Switzerland abound in natural scenery and historical lifes and are so widely known that people all over the world go there. The less fortunate countries will have to take recourse to the business method of bringing home to the foreigners the beauties of their respective countries by means of Advertising. It was only recently that we heard of a large influx of American tourists in France. It is estimated by the Department of Commerce that about 300,000 Americans out of a total of 120,000,000 spent their summer this year in Europe, leaving in that continent £240 each or a total of £72,000,000. Looking to the lucrative nature of such a traffic the English Railways have begun to din into the ears of the Americans the slogan of 'Come to England'.

> Tourists in Canada, including native-born and those from the United States, spent, it is estimated, £ 80,000,000 in 1925, of which sum £ 5,000,000 was spent by tourists visiting the three national parks of the Canadian Rockies—Banff, Jasper, and Waterton Lakes.

India too is not lagging behind. During the war the tourist traffic was practically suspended. Since the termination of the war, however, there has been a marked increase in the number of tourists visiting India, especially during the cold weather season, Americans demanding special trains. They come with the object of seeing and studying our country. The time at their disposal as well as the nature of their scanty programme gives them hardly any idea of what India is like. When they land at Bombay, rightly termed the "Gateway of India", they travel in comfortable first class and tourist special cars of the Bombay-Baroda and Central India Railway and the Great Indian Peninsula Railway, and visit only Delhi, Agra, Fatehpur Sikri, Benares and Calcutta. As some of them come here on a pleasure trip they spend large amounts of money in purchasing fancy articles and curios and in going about the place. Their programme shows that they have not gone to the South at all. Probably they are either under the impression that there is nothing worth seeing there or the Tourist Agencies have not included these places in their programmes.

As the tourist traffic is growing and as there is a demand for information about India, the two Railway Companies, *viz.*, the G.I.P. and the B. B. & C. I. have issued Guide books relating to the part of India the respective railways traverse. Both the railway companies

have appointed foreign agents and are vigorously advertising the merits of their lines not only in England and America but also in this country. In addition to this, the G.I.P. Railway has established a Publicity Bureau in Bombay.

SITUATION OF THE MYSORE RAILWAY.

The Mysore State, which possesses excellent material for attracting tourists and visitors, has done the right thing in allotting Rs. 2 000 for advertising her railways on the recommendation of the Economic Conference. Seringapatam, the Capital of the Mysore State during the reigns of Hyder Ali and Tippu Sultan; Mysore, the present capital of the State, with its beautiful roads and ideal gardens; Bangalore, with its glorious weather and sporting attraction; Sivasamudram, Kannambadi and Bhadravati with their Engineering interests of great magnitude; Kakankote with its charming natural forests full of elephants affording excellent sport, and the delightful Gersoppa Falls, besides many other places suitable for hunting and shooting are only a few of the attractions to mention, that are sure to bring in hoards of visitors from all parts of the world if they are well advertised. Added to these, the more notable functions held in Mysore, *viz*., the Birthday celebrations of His Highness the Maharaja and the Dasara festivities which also include in their programme racing and polo tournaments, possess in them ample opportunities for attracting all classes of traffic for Mysore. The business of the Mysore Railway should not end with advertising all these if it cannot have the means to handle the different varieties of traffic that offer themselves.

The Mysore State being situated in the interior of the country has its own special points to consider before venturing on a successful campaign of advertising.

(*a*) As the State itself cannot originate a large amount of traffic, it must depend on outside resources for bringing in extra traffic.

(*b*) Unlike the G.I.P. Railway or the B. B. & C. I. Railway, which have the advantage of a direct connection with a port which brings people from all parts of the world, the Mysore Railway will be indirectly benefiting the Madras and Southern Mahratta Railway with which it is connected, if it advertises and attracts traffic either in India or from outside.

(*c*) As the Mysore Railway has only a mileage of about 300 miles roughly, with an annual gross earning of less than Rs. 50 lakhs, it is evident that it falls under Class II Railways and hence cannot undertake to bear the burden of advertising on the same magnitude as the Class I Railways can do with confidence.

It will, therefore, be in the interests of the Mysore Railway if it works in co-operation with the M. & S. M. Railway in establishing a Publicity Bureau and advertising not only in India but also outside. Each Railway can bear the cost of working the Bureau on a definite basis. If this proposal, which is well worth trying, cannot be put through, then the only means left for the Mysore Railway is to do its best on its own initiative.

SCOPE FOR ADVERTISING.

The scope for advertising the foreign Railways and arranging tours on them may be said to be almost perfect in America. Pictures depicting the mode of life, the natural scenic beauties, historical sites, etc., Engineering and Industrial enterprises of other countries are shown in the largest halls of the most important cities such as Philadelphia, New York, Boston, Pittsburgh, Detroit, Chicago, Washington and Brooklyn to mention only a few. Approximately 500,000 people, who are enthusiastic about travelling, attend these lectures during the season paying an admission fee. In addition to the above-named centres, there are many schools, clubs and other large interests who regularly contract to take a series of the said lectures. Practically every city in America has two or more large clubs & Travel Lectures are included in their season entertainments, the fee for which is a high one. The above particulars, though brief, will give some idea as to what extent demand is made for this class of entertainment and the fact that they pay heavily for it goes to demonstrate in some measure that the Americans are keen on travelling.

The same kind of facilities are not to be found in other countries. It is not because that people are less enthusiastic about travelling but because systematic propaganda has not been undertaken by any transportation agencies or private lecturers as is done in the U.S.A. Only the most famous summer or winter resorts are flooded by the people during the season. For this traffic, the Transportation Agencies do not seem to be responsible at all in any way. It is chiefly the attraction which the place holds for the traveller. Though the Railways have recently realized the necessity of advertising, they are not as successful as the Americans in spite of there being a wide field for such an enterprise

In India, however, the Bombay-Baroda and Central India Railway and the Great Indian Peninsula Railway are carrying on in this connection, persistent propaganda. These Railways have realized the importance of this traffic, the more so because the competition between them to carry passengers to Delhi is keen, the B.B. & C.I. Railway being the shortest and the quickest route. The result of their advertising has borne excellent fruit, for the B.B. & C.I. Railway alone ran in 1923 six specials carrying about 500 American tourists. In 1924 again six special trains were carrying about 400 tourists. These trains relate only to the organized trips arranged by the Tourist Agencies. Besides this, there was an appreciable increase in the number of tourists who travelled in small parties of two, three or more. That there is a large population in India as well as outside who are keen on travelling is quite evident. With such a wide field before it, the Mysore Railway can successfully advertise and attract traffic, if a separate organization is established to tackle this problem.

METHODS OF ADVERTISING.

Having established a Publicity Bureau either in collaboration with the Madras and Southern Mahratta Railway or by itself, the Mysore Railway should start first of all on its own account and make out a list of tours on its line showing :—

(*a*) What numbers of people it can conveniently carry.

(*b*) What accommodation there is at the halting places.

(*c*) How much it estimates that such a tour will cost.

It should also consider whether there is any likelihood of sufficient tourist traffic from overseas (America, Canada, England, etc.) in the future to make it worth while spending money on the necessary rolling stock, dining cars, etc.

The chief methods for attracting traffic are:—

1. Establishing a Publicity Bureau and arranging to print and distribute posters, time-tables and Pocket Tourist Guides in foreign countries, on the steamers arriving in Bombay and Madras and throughout India.

The Mysore Railway can arrange a "Poster" competition and adopt one of the designs submitted in the competition. A selection of these pictorial posters may be sent for exhibition at each Railway company's principal stations and offices in India and also to England and America and in return the Mysore Railway may reciprocate by accepting copies of their posters for exhibition at its stations. These copies of posters as well as pamphlets may be sent to the leading European and Indian hotels in India.

2. To distribute illustrated Pocket Guide books in foreign countries. An illustrated Guide to places of interest on the Mysore Railway may be circulated gratis on the outward bound passenger steamers among the more important Travel Agencies in England and America. The need for such publication is felt more particularly in the busy season between October and March.

The object of publishing the illustrated Guide should be not so much to advertise the Railway as a commercial undertaking as to assist tourists and others visiting Mysore, so as to enable them to arrange their tours with the greatest amount of comfort and economy to themselves. The Guide should itself be printed on a good quality of paper and contain many illustrations of places of interest on the Railway system, as well as a useful map very neatly printed in colour. These copies may also be utilized profitably by placing them in the Tourist trains of other Railways during the season for the tourists to see.

3. To exhibit cinematograph films illustrating the places of interest on the Railway in America, England, Germany, France, Japan and India. As this is a costly enterprise, how far the Mysore Railway can undertake this is a matter for it to settle. The G. I. P., the B. B. & C. I. and several other Railways are exhibiting their films in foreign countries.

TRAIN ARRANGEMENTS AND ROLLING STOCK.

If a scheme of forming a Bureau were properly worked out by the Mysore Railway there would probably be an increase in the tourist traffic, but it is impossible to say whether the increase is likely to be sufficient to justify the building of special Rolling stock and refreshment cars.

The accommodation to be provided for tourists should naturally vary according to the size of the party. Small parties upto four in number can be accommodated in a saloon and parties of from 4 to 8 in a combined sleeping and restaurant car.

These carriages should preferably be self-contained with their own cooking arrangements which is very necessary in a country like ours with its long distances and infrequent opportunities for obtaining English food. But this feature does not appear to be essential in the case of the Mysore Railway as the distances

are small and the Refreshment rooms are also not far from one another. In any case, a refreshment car with an ample supply of good food becomes necessary.

Larger parties upto 25 or 30 may be safely accommodated in ordinary bogie carriages without dining car accommodation but for these a refreshment car should be attached.

All the above-mentioned parties can travel by ordinary trains the vehicles in which they are travelling can be detached from and attached to trains according to an arranged programme.

For larger parties still, 50 and above, paying first class fares special trains may profitably be run. A special train should consist of bogie first class stock and dining car accommodation, according to the number of tourists on the train, the first class carriages being specially fitted up for tourist traffic.

Each compartment should be fitted with electric lights and fans and provided with arm chairs, reed chairs and carafes. Flower vases preferably of brass may be put into the carriages to enhance their beauty.

If means can be found compartments may be divided into two for two married couples.

Another very important facility which must not be overlooked is the provision of a Bath. Dirt on the journeys and the inability to have baths will never enliven the spirits of the pleasure-seekers. The Railway might consider it unnecessary to put a Bath into each first class compartment owing to the fact that ordinary passengers who travel in these carriages are of such different races and habits that it would be more sanitary not to have a Bath apart from the question that supplies of hot water are not available at all hours of the day.

If the Mysore Railway is going to interest itself in tourist traffic, it might be worth while for it to design a special Bogie carriage to be a sort of kitchen-dobbi-and bathing car. Two or three Baths might be put up, each Bath in a small separate compartment and a small barber's shop could be arranged and a dobbi taken on the train. These little conveniences would greatly add to the comfort of the tourists. These would enable the men to have baths, to get their clothes washed and to have the services of a barber.

A lavatory should not be forgotten to be attached.

Special arrangements for filling water tanks in vehicles should be made at stations *en route*.

Catering Arrangements.

Special catering arrangements should be made at fixed rates *per diem*. To make catering efficient and satisfactory, constant supervision is necessary.

Inspection.

Lastly, some responsible officer of the Railway must make it a special point of travelling with some of these tourists and should not only inspect but also submit a report on the arrangements made together with any remarks or recommendations he may wish to offer:—

(*a*) as regards the general comforts of the carriages themselves;

(*b*) as regards the arrangements made for meals for the tourists.

(*c*) any remarks after speaking to the tourists themselves;

(*d*) any comparison which he may wish to make as regards Mysore trains and those of the M. & S. M. and other Railways.

He should also see that the trains work up to the advertised timings and everything works up to the programme

Prospects of Success.

In conclusion, it must be said that the tourist traffic ought to pay provided the service is good and certain. It is also very difficult to say anything about the prospects of this traffic which depend entirely on the amount of successful propaganda undertaken in India as well as outside by the various Travel Agencies. The Travel Agencies, such as Messrs. Thomas Cook & Son, The American Express Co., and Raymond Whitcomb & Co., may be requested to canvas traffic on behalf of the Mysore Railway. But it will be in the interest of every Railway in India if a Central Bureau is established under the direction of the Railway Board. In order to get into touch with the individual tourists in foreign countries, it will be proper if the Government of India, *i.e.*, the Railway Board undertakes this responsibility of having proper agents in various countries from which tourists now come, the function of these agents being limited to the distribution of literature and acting as Publicity Agents. The agents from information supplied to them can very easily place individual tourists in direct communication with the Railways serving the parts of India they wish to visit. If such a scheme is properly worked out, there would probably be an increase in the tourist traffic in India.

Organization of Hand-Loom Industry and Trade.

By K. S. Rao, L.T.M.,*

Textile Expert to the Government of Bihar and Orissa.

The imperative necessity of reorganizing the industry and trade of the scattered cottage industries has now been universally realized as one of the prime factors in the economic rebuilding of India. To this Congress it would also be superfluous for me to say anything as regards the importance of this work from the co-operative point of view, as next to agriculture, weaving is the most important and extensive industry of the primary society members. The success of the modern factory industries is mainly due to efficiencies and economies possible to mass production and the facilities and profits of distribution secured by the standardization of their goods. The men employed in cottage industries, especially the weaving class, buy their raw materials individually from their Baniyas or Mahajans, and sell their finished goods to these same local monopolists or in the local hats. The disadvantages of such an organization are obvious and the appalling poverty, disintegration and economic helplessness of our artisans is the obvious result. Impelled by a desire to help these cottage workers, especially the weavers, the Co-operative Departments in the different provinces of India start credit societies and weavers' stores; but their attempts do not seem to have been crowned with success anywhere. Our own experience of the two big co-operative stores in this province has been disappointing. The reasons for their failure are many and are noted in the Government resolution of 16th February, 1926,—on the working of co-operative stores. In laying down certain instructions Government, however, do not forbid further experiments being made; but, on the other hand, they suggest that if such experiments are made they should be initiated very cautiously and only in places where the closest supervision from the department is possible. Instead of giving up as hopeless our efforts to organize the industry on co-operative lines we ought to persist in continuing our experiments till we evolve a successful organization for the development of our cottage industries. After all no circumstances can be conceived as more favourable to the growth of infant cottage industries than under the ægis of and encouragement from the co-operative movement.

Let us now examine the causes for the failure of the weavers' stores, not only in our own province but also in other parts of India. The Weavers' Co-operative Stores, as co-operative credit societies, may be said to have relieved the weavers of their personal indebtedness to some extent, but they do not seem to have rendered any very material financial help to the industry or to have improved the economic condition of the weaving profession. The weavers, deeply indebted to the Mahajans and with a host of other liabilities, cannot be expected to be able to use the small loans made by their societies for purposes of their trade or their industry. Where these loans were made in the shape of raw materials the result was equally unsuccessful. In many cases the raw material, being their property, was converted into cash either to pay off their debts or to meet the expenses of marriages, etc. The weavers who, owing to their ignorance, invariably look upon their societies as alien institutions, try to benefit themselves as much as they possibly can at the sacrifice of the interests of the societies. In the majority of cases the weavers' stores failed on account of inefficient organization and operation, and, in some cases, because of the sheer unscrupulous management of the men in charge. Reckless financing may also be said to be responsible for the failure of these institutions. A weavers' store should either be a manufacturing institution or a retailing shop; but it cannot be both. In these weavers' stores, distribution or sale of the produce is invariably neglected. We do not yet seem to realize that efficient distribution is no less important a factor of economic prosperity of weavers than organized production. In the first place, successful and rapid distribution or marketing has in itself a remarkable effect upon the methods of production. For example, if marketing is economical and well-carried out, a resulting higher profit is at once ensured by the steady increase in the demand for that particular commodity. Again, the importance of the standardization of goods has not as yet been realized by us. In short, I may say that the most essential

* The above Paper was read before the Bihar and Orissa Co-operative Congress held at Ranchi April, 1926.

factors for the successful working of a weavers' stores are : (1) mass production, (2) standardization of goods, (3) well-organized distributing agency, and (4) efficient supervision.

In the absence of industrial stores, the various central co-operative banks in this province can do much in assisting the local home and cottage industries without risking any of their working capital. Probably I may be able to make you understand my views much better by giving you a concrete example of what has been done in this direction by the Rohika Central Co-operative Bank at Madhubani. This bank, at the request of the Registrar of Co-operative Societies, who, I may say, is taking personal interest in this experiment, has so far invested Rs. 5,000 out of their Development Fund formed out of profits earned. This money is quite secure, for it is amply covered either in the form of raw materials or finished goods. The Department of Industries is responsible for the economical and efficient production of standard hand-woven *markin* cloth and its sale through the weavers' societies. Yarn is purchased wholesale from mills and it is distributed among some weaver members of the bank for conversion into cloth, for which weavers are paid wages at rates settled with them. The woven cloth is then finished to give the exact effect in smoothness and closeness of texture of mill-made cloth and put on the market with the co-operative trade mark to distinguish it from similar other foreign or local mill goods in the market. The cloth is then supplied to the various co-operative societies in the province at a standard rate which includes cost of packing freight, etc. This experiment so far has been encouragingly successful. It has been possible to sell the cloth at almost the same price as similar quality bazaar mill-made cloth. The great gain to the co-operative movement is that semi-starved weavers now earn a steady income of 20 to 25 rupees a month, as has been proved by actual first-hand statistics.

The ultimate aim of such an organization will be the manufacture of clothing by the members of the stores, forming part of the central co-operative banks, for the use of the members of all the primary societies in their areas. As the middlemen's profit and even ultimately a major portion of the cost of transport are done away with in such an organization, the actual consumers, in providing work to their brother artisans, can get their own requirements of clothing at fair and reasonable rates. This system of local supply and distribution is not new to our rural life ; for every village in old times had its own weavers who supplied the needs of the village. For want of enterprise on the part of the weaver and failure to adopt the improvements effected in the looms and in the technique of weaving, he could not keep pace with the changing tastes of his customers. As a result, better finished and finer but far cheaper goods from the mills are gradually displacing the coarse *motia*-cloth of the village *jolaha*. If this cottage industry of hand-weaving is to exist at all, not only the Department of Industries but also the Co-operative Department will have to come to the assistance of the hand-weaver, the former supplying necessary technical assistance in manufacturing and the latter providing the necessary financing and distributing agency. With this happy combination and co-operation it may be possible to do a great deal for the development of our greatest decaying cottage industry, of which we speak so much both in the press and on the platform.

As I am writing this note in fullest consultation with the Development Officer and my other friends of the Co-operative Department, I have made sure that it will be proper and beneficial for the co-operative central banks to take up this great work of reviving and revitalizing the greatest non-agricultural industry of India. The technical objection of investment of bank capital in a business venture can be easily met by several banks pooling together grants only from their Development or Common Good funds, and financing one common centre for the organization and finishing of the weavers' produce of their adjacent areas. So that if all the 60 central banks co-operate in establishing and running, say, 5 to 15 centres, like the one at Madhubani a great and enduring organization can be built up which will again place the weavers on their legs and stop them from throwing up their hereditary profession and becoming coolies in mines or bullock-cart driver in big cities, as some of them are now doing. There can then be no question of engaging in a speculative venture for profits, as the banks will be doing this purely for the benefit both of their ordinary members who are consumers and the weaver members who are the producers of these goods If the aim of the co-operative movement is the enrichment of life and betterment of the industry of our artisans and agriculturists, almost nothing can secure it more permanently than the successful working of

this plan of reorganizing the cloth supply and production of our villages and towns. I can assure you that if the demand for hand-woven cloth is thus made to increase so as to ensure regular and profitable work all the year round to the weavers, we can effect great savings from large scale production and then we can supply this hand-woven cloth as cheap as mill-made cloth of practically the same quality, or even much cheaper. Thus I can demonstrate both by figures and by actual facts of past experience.

The modern strong sentiment for country-made cloth can thus be beneficially utilized and exploited through the very popular agency of co-operative institutions, while the high quality of the cloth will be secure by the closest supervision of the work by the many officers of the Industries Department who are now allotted to different areas for the introduction of fly-shuttle looms and general reorganization of the weaving industry. True, we cannot possibly use hand-spun yarn for this scheme of bulk production. That will only be possible if and when hand-spun yarn of sufficient tensile strength for our looms can be procured at economically reasonable rates and in bulk quantities. That is a consummation which has admittedly not been reached; and we need not at all enter into the academic controversy of whether or not it can be achieved under modern industrial and trade conditions of the world market in piece-goods, from the operations of which India cannot be artificially protected eternally. But if when such a thing is possible we can at once replace the mill yarn with the hand-spun yarn. For a long time at least, however, the available stocks of hand-spun yarn will not be enough even to supply all the Khaddar Bhandars. Most of it also is still of too low a tensile strength for modern looms. Meantime we cannot allow the whole weaving industry to languish and die. This scheme cannot, therefore, be in any sense reckoned as antagonistic to the organizers of the *khaddar* industry of cloth from hand-spun yarn; in fact, it may be considered to be its logical and ultimate solution. Co-operative workers will, therefore, be doing yeoman service to India if they help to reorganize and popularize the industry of hand-weaving and work up local propaganda in its favour in their respective areas.

The Department of Industries can also give adequate grants as well as the all-important assistance of their expert officers for this work. The last Director of Industries, Mr. Collins, had already directed me to take up this matter officially and promised fullest sympathy from Government. But that by itself cannot solve the problem: because at least in its initial stages this revived and reorganized industry will require a certain amount of special facilities and economies to enable it to successfully hold its own against mill-woven cloth. These can be best secured by eliminating and minimizing middlemen's profits and transport charges; as can be easily done if we also use co-operative banks and societies as our agencies of finance and distribution. And in order to secure their regular, efficient and active co-operation in this matter, it is imperative that they should invest some of their own profits in the scheme; so that they may realize a personal interest and an immediate duty in the fruition of this scheme. Also a certain amount of propaganda will be necessary to secure the fullest attention and patronage of the buyers and the renewed confidence and activity of the producers: and it is now invariably admitted both by Government and the public that institutions like co-operative banks, stores and societies are the most facile and safe agencies for this purpose. The industry and its organization for distribution being localized there will also be closer supervision by non-official and official workers, saving of freight charges and the permanent ensuring of local interest and co-operation with our endeavours to rebuild the industry and business of our weavers.

In the very interesting paper read by Dr. J. Newton Friend before the British Association, we notice a tribute to the knowledge of science possessed by the Druids. In the popular mind they are chiefly associated with human sacrifices, though in this respect they were not more cruel, but possibly more humane, than the priests of other countries in primitive times. At any rate, according to Dr. Friend, they were far from illiterate. Young men were sent from the Continent to Britain to study with the Druids, whose knowledge was held in great esteem. They possessed a good knowledge of astronomy. A curious fact mentioned by Dr. Friend is that the misty atmosphere of British hills led them to invent the water-clock as a substitute for the sun-dial, the readings of which, though reliable in sunny climates, were frequently obscured by cloudy skies.

Canadian Trade and Finance.

Trade Movements.

Montreal, September 2, 1926.—The general course of business so far this year has been very satisfactory in practically all branches and gives much assurance as to the substantial soundness of its foundations. The tangible figures of trade and transportation as they have come in have shown general gains over the previous year. Freight car loadings between the first of January and the 14th of August, the latest available date, total 1,840,721 against 1,629,371 for the same period in 1925, increases over last year being in grain, coal, forest products, merchandise and miscellaneous freight. Bank Debits to individual accounts, which constitute a good index to the volume of current business, are running well above the totals of 1925, and for the first six months of the year show a gain of more than 13 per cent.

The major manufacturing industries have been generally on a more satisfactory level of operations. The iron and steel industry is holding up much better than last year, as the result of a renewal of railroad equipment buying and the greater activities of the agricultural implement and automobile manufacturers. The cotton textile industry has been well sustained with orders, although the volume of placing business has been affected by unsettled price conditions. The woollen and worsted goods business has been passing through a trying period, but wool prices are now firmer in world markets and give some evidence of stability. The boot and shoe industry, which has been hampered by labour troubles and irregular prices, is reported to be working on a better basis and hide and leather markets have recently become stronger. Automobile production, while now showing a seasonal decline, established a new high record for the first half of the year.

The influence of the better agricultural purchasing power which has been felt throughout the industries has been augmented by the heavy expenditures that have been made in building and construction work, especially industrial and hydro-electric developments. Every part of the country, with the exception of some of the Maritime sections, shows a higher total of building contracts awarded for the first seven months of the year, the aggregate value for the Dominion being $228,408,300 as compared with $147,723,500 for the same period last year. A high level of production has been maintained in the pulp and paper industry, and the output of newsprint from Canadian mills for the first seven months of the year totalled 1,056,790 tons, a gain of more than 22 per cent over the same period in 1925.

Reports of wholesale and retail trade throughout the country are almost uniformly good. Employment is at high levels. The increased volume of production and larger returns from industry are reflected in the investment markets, Bank Deposits and the record of Life Insurance Sales. Savings Deposits in the Chartered Banks at the 30th of June were $1,328,000,000, an increase of $9,349,800 in the first half of the year, while the amount of Life Insurance purchased during the same period aggregated $228,817,000, an increase of $21,724,000 or 10 per cent over the corresponding months of 1925.

The most important factor in the business outlook at this time of the year is, of course, the agricultural situation. The grain crops in the west made a good start, but as the summer advanced, deficient rainfall and high temperatures inflicted some damage in certain sections of Saskatchewan and Alberta. The mid-August report of the Dominion Bureau of Statistics placed the probable yield of wheat at 316,960,000 bushels, which compares with last year's final estimate of 411,375,750 bushels. Since that date, however, heavy rains have been experienced practically throughout the prairie provinces, with the result that yields will be considerably in excess of the August estimate.

The winter and spring wheat crop of the United States has been officially estimated at 829,201,000 bushels against last year's crop of 666,000,000 bushels. Estimating the domestic seed and feed requirements of that county at 650,000,000 bushels, there remains a probable surplus of 100,150,000,000 bushels. European crop reports, however, indicate that wheat production outside of Russia will be below last year and the reduction probably will be sufficient to offset the increase in the United States. The Russian government states that its grain crops are better than last year. The availability of any export surplus, however, is a matter of as much uncertainty as in previous years. The world carry-over of wheat this year was very moderate and, so far as the northern hemisphere is

concerned, there appears to be no present reason, in the light of probable supplies, to expect other than remunerative prices for the Canadian crop.

Foreign Trade.

Foreign trade for the fiscal year just closed has resulted in another large trade balance in favour of Canada. Total exports amounted to $1,328,537,000 compared with $1,081,361,000 for the previous year and, although our imports were greater by $130,470,000 than in 1925, Canada's favourable trade balance amounted to $401,134,000, which represents the largest favourable trade balance per capita of any country in the world. The remarkable growth of our export trade is due to the physical expansion or volume of our production as well as to the appreciable general increase in value, and the enlarged export of raw materials is accompanied by gratifying increases in shipments of manufactured goods. The recovery of industry in Europe and the increasing purchasing power of other countries have, of course, contributed largely to the growth of our agricultural exports. One of the most striking features of Canadian export trade, however, within recent years, has been its increasing foreign ramifications. Particularly noteworthy is the development of our trade with South America, which has been stimulated by the activities of Canadian Trade Commissioners and the commercial penetration of that continent by Canadian Banking Institutions in recent years.

The following is a comparative summary of Canadian export trade with southern countries in which this bank is established, covering the past two fiscal years:

EXPORTS OF CANADIAN PRODUCE

Twelve months ended March 31st.

	1925	1926
British Guiana	2,422,524	2,256,556
British Honduras	427,838	504,411
B.W.I.—Barbadoes	1,738,442	1,592,570
Jamaica	3,252,783	3,976,210
Trinidad & Tobago	3,552,516	3,875,132
Other B.W.I.	2,304,696	3,851,248
Argentina	10,322,373	12,639,706
Brazil	3,417,249	4,832,391
Columbia	269,678	683,700
Costa Rica	153,627	213,445
Cuba	7,142,406	8,524,713
French West Indies	145,334	223,770
Haiti	489,596	608,117
Peru	928,796	1,226,355
Porto Rico	683,915	866,688
San Domingo	362,849	350,256
Uruguay	859,206	1,910,269
Venezuela	1,065,253	1,483,333
Total	$39,539,081	$49,618,870

The Economic Situation of France.

The course of French exchange during the past months has been followed everywhere with the closest attention and much anxiety. The failure of the plan for stabilizing the currency of Belgium exerted a depressing influence abroad, and a breakdown in the French financial and monetary system would have a most unwelcome effect on the economic situation in general.

The financial history of France since the war, should it ever be written in its entirety, would be a tale of many crises. Eight finance ministers have come and gone since the beginning of 1925, and their successive failure to obtain parliamentary support has prevented the adoption and maintenance of any effective financial policy. In its absence, the currency situation has gone from bad to worse. In the terms of the dollar, franc quotations have fallen from over five cents a year ago to less than two cents in July last, from which there has been some recovery. It is exceedingly difficult to unravel the tangled statistics of French finances in order to trace the development of the insidious process of inflation which has accomplished so disastrous a depreciation of capital values with its blind and irrational redistribution of wealth and its yet unended chain of injustice and suffering. It has its roots in the expansion of the fiduciary circulation, through the medium of loans or advances which the French Government has obtained from the Bank of France for the purpose of meeting the ever maturing short term floating debt and the continuous budgetary deficits. The failure of money markets to absorb by way of renewal the short term obligations is due to "the flight from the franc" into commodities and foreign currencies, which has done so much to accelerate its depreciation. This export of capital is the result of fear of excessive taxation on the part of the French people and investors, coupled with the loss of confidence in the stability of French currency.

At the close of 1913, the National Debt of France was estimated at 32,594 million francs. It was an internal debt and the country was free from foreign obligations. It may be recalled that the French pre-war debt was one of the largest per capita in the world and in 1913 approximated the then annual national income.

The economic burden sustained by France during the war was enormous. Her domestic debt was nearly quadrupled and a foreign debt was incurred nearly equal in amount to the

total debt of 1914. Practically her whole male population was mobilized from the first. Her territory continuously occupied by the enemy included the most industrialized and revenue-producing districts, and most of her investments abroad in Russia, Austria and Germany of some forty billions of francs have been lost. The losses of the devastated regions were officially estimated in 1921 at 140 billion francs. The Treaty of Versailles provided for the payment of damages. The maximum amount claimed was scaled down from time to time by the Reparation Commission to meet the revised estimates of Germany's capacity to pay, but reparations brought practically no tribute to the French budget. The military occupation of the Ruhr by France to enforce them proved a failure. From 1919 to 1923, the hope of obtaining reparations from Germany led to methods of budgetary accounting that served to conceal the real condition of French public finance. The broad summary of the finance of those five years was that owing to the failure of Germany to meet the expenses of restoration, France had to continue borrowing, with the result, taking her revenue against her total expenditure, that another 150 billions were added to the public debt.

It is in the continuous budget deficits that we find the fundamental cause of the decline in the internal value of the franc. When the French money market was unwilling or unable to absorb long-term issues, the government, under pressure, resorted to much less desirable means of raising money. The issue of Treasury Bills and National Defence Bills increased from 23 billions in 1918 to over 61 billions at the close of 1923. These bills which constitute the largest element in the floating debt, mature and are re-issued at intervals of three months to a year. When maturities of longer issues have been heavily concentrated, repeated crises have arisen at the Bank of France and under pressure of the fiscal necessities of the State, the government obtained further advances. Broadly speaking, these took the form of an increase in the Bank's note circulation, which rose from 10,042 million francs in December 1914 to the prodigious total of 49,993 million francs at the end of 1925.

The causes of these Treasury deficits have been, of course, the continued inability sufficiently to increase the revenues and to decrease expenditures. The basic difficulties have been the enormous burden of war debt, the absence of reparations to cover the cost of restoration of the devastated areas and the problem of securing a real equilibrium between receipts and expenditures, owing to the fact that the depreciation of the franc was accompanied by a growing gap between world prices and real (gold) prices in France, which widened from 3 per cent in 1922 to 20 per cent in 1925. The French system of taxation is traditionally faulty in its distribution and incidence, but the consistent increase in tax revenue in recent years seems to afford some proof that the defects are being slowly remedied. The heaviest taxation of all, of course, has been the confiscatory taxation of inflation, and with the progressive depreciation not only of incomes but also of capital, it is not surprising that the ability of the government to finance itself has become impaired.

The depreciation of the franc, with its inevitable consequences of higher costs and prices, has been responsible for the increasing cost of administration which, including military establishment, accounts in the Budget of 1926 for over 40 per cent of the total expenditure. The service of the internal debt alone absorbs 51 per cent of the balance. The burden of this debt can be appreciated from the fact that in December 1925, the total internal debt amounted to 286 billion paper francs, of which 130 billions is made up of floating and short term debt. In addition, there is the external debt, including the political debt of 30 billion gold francs owed by France to Great Britain and the United States and the commercial debt of 5 billion gold francs, the former of which will be considerably reduced with the consummation of the pending settlements with Great Britain and the United States. The gold value of the foreign debt has not been affected by the decline of the paper franc, but the course of events has lessened by reducing the gold value of the franc, the real burden of the internal debt. Taking the paper franc at par, the total public debt of France exceeds the total national wealth, which was estimated at about 300 billion gold francs before the war, and with the addition of Alsace-Lorraine is probably as great to-day despite war losses. In all sympathy with the plight of the security holders of France, it must be said that a return to the pre-war parity is not economically possible. There can be no adequate readjustment of the sacrifices and injustices that already have flowed from such a progressive depreciation of the currency. With the decline in the paper franc to three cents, however, the gold value of the internal debt has been reduced to about forty-four billion gold francs, and that

figure in addition to the reduced foreign debt does not constitute an unbearable burden in relation to national wealth, which, consisting as it does of lands, buildings, railways and industrial equipment, has been unaffected by monetary depreciation.

The financial problems of France are half technical and half political. Owing to their magnitude and complexity, however, there is some danger, perhaps, of under-estimating the efforts that have been made and the results so far achieved. The devastated territories with their industrial equipment have been restored. Disillusioned of the prospect of immediate reparations, France has made serious efforts to balance her budget in 1924 and 1925. Expenditures have been reduced and revenues augmented. The budget of 1926 was technically in balance, with a small surplus, but it is probable that the heavy rise of 16½ per cent in prices during the three months ended June (Statistique Generale—Index of Wholesale Prices) will somewhat upset previous calculations.

The balance of international payments, which from 1914 to 1920 was unfavourable to an extraordinary degree, has since then become less unfavourable until the recent flight of capital. The development of export trade, due partly to the advantage given to French goods in foreign markets by the adverse exchange, is in large measure attributable to the return to productivity of the great industrial centres devastated during the war, and the recovery of Alsace-Lorraine. A praiseworthy effort has been made by France to meet her foreign obligations. The capital value of the foreign debt was reduced during the year 1925 by 1.041 million gold francs, which, derived from taxation, was equivalent to about 4,000 million in paper francs. Furthermore, progress has been made towards a more or less satisfactory settlement of the reparation and inter-allied debt problem. All these are stages on the road of financial improvement.

There remains, however, the crux of the whole financial situation in France.—the instability of the currency. Without stabilization, neither a budgetary equilibrium nor a Treasury balance is likely to be achieved and inversely, without a balanced budget and measures to take care of the floating debt, currency stabilization is almost impossible. The problems are complex and inter-related and will require a supreme financial effort for their solution. Unfortunately, this cannot be accomplished at once, and in the meantime economic and psychological forces working in favour of further inflation are strong.

The Committee of Experts officially appointed to make a general survey of the monetary situation has just issued its report. While they are in favour of an early return to the gold standard, they recognize the necessity of first securing a permanently balanced budget. To this end, the Committee makes various recommendations for increasing revenues and the reorganization of expenditures. The basis of taxation is to be revised in favour of indirect as against direct taxes, on the grounds that they are immediately remunerative and that the yield automatically rises with rising prices. State railway tariffs are to be raised and the Tobacco Monopoly is to be organized as an autonomous commercial enterprise. The immediate difficulties of the Treasury in connection with the enormous mass of maturing short term and floating debt are to be met by the creation of a special organization—"Caisse de Gestion"—to which will be paid a fixed sum by the Budget, sufficient to cover interest and to form a small sinking fund; and to it also will be allocated a portion of the proposed foreign stabilization loan and the assignment of the revenue of the Tobacco office for temporary advances, against demands for re-imbursement. These measures, which are expected to restore the confidence of the public and to encourage the return of French capital from abroad, lead up to the stabilization of the franc and control of exchange. For this purpose, a stabilization loan or large foreign credits are regarded by the experts as necessary and these require as an essential preliminary the ratification of the debt agreements with the United States and England. The specific rate at which the franc should be tied to gold is regarded as problematical. With the flight of capital and speculative sales of francs, exchange has been drawn below the figure appropriate to the trading position. To stabilize at present levels, around three cents, internal prices which are now considerably below the level of other countries reckoned in foreign currencies at the present rate of exchange, will have a tendency to move towards parity with prices abroad, and there will be the danger of further inflation. On the other hand, it is undesirable, owing to the weight of the public debt and the trials of deflation, to restore the franc to a figure which would make internal prices above the world's level and risk the failure to maintain it as in the case of Belgium. The Committee indicate

the lines along which stabilization should proceed: (1) the pre-stabilization stage, fixing the limit of State advances by the Bank of France, modification of the fixed maximum note circulation in order to permit the Bank to strengthen by purchases its stock of foreign currencies and gold; (2) the period of realized stability of the exchange, due to the policy of the Bank; and (3) the establishment of a new legal rate of exchange. The Committee foresee that there unquestionably will be serious economic consequences as a result of stabilization or devaluation, involving reduced exports and a restricted home market. Many manufacturers and traders have, no doubt, been unconsciously living on their capital in the past few years, through insufficient allowance for progressive depreciation; and France must expect to pass through the crisis with a certain number of failures and with unemployment. In that and the reaction from the realization by her thrifty people of what has actually happened to the past savings, she will need our help and sympathy. The difficulties of the transition process, however, will be mitigated to some extent by the fact that stabilization around present levels will enormously strengthen the reserve ratio of the Bank of France, which holds in its vaults over 700 million dollars in gold, the third largest gold reserve in the world; and, further, that the larger textile and metallurgical industries are pretty well on a gold basis. Neither the Committee of Experts nor any one else can put forward for France a painless solution of her monetary problems, but the hope that her difficulties may yet be less acute than those experienced elsewhere may well inspire a determined and harmonious effort on the part of her people to restore their Public Finances to a sound position.

Economics in the West.

The Return to Gold.

September 1st, 1926.—An earlier generation of Britons, brought up on Fenimore Cooper, have in the past tended to regard Canada as a land of wheat fields, forests, prairies, mountains, barren wastes and frozen lakes and rivers. Gradually however, different ideas have become implanted in the minds particularly of business men, and with each successive stage of development the vast resources of this young country are claiming increasing attention and attracting larger and larger supplies of capital for their exploitation. Before the war the bulk of the financial backing for Canadian public and private enterprises was obtained from Great Britain. At present, however, scarcely any new capital is being supplied from this country. Apart from the surplus income which Canada now re-invests in her own industries, the United States furnish a very large share of the new money flowing into the rapidly developing industrial undertakings or being absorbed by government and municipal loans. Since the war scarcely £20 millions of new money has been raised for Canada in this country, while the amount subscribed in the United States in 1925 alone was nearly $150 millions. It is estimated that of the Canadian investments held externally in 1913 Great Britain owned 77 per cent and the United States 17 per cent. Ten years later the figures were put at 42 and 52 per cent respectively.

The preponderance of the United States is even more conspicuous in the case of Canadian industrial investments as opposed to securities generally, for in 1923 the capital of Canadian manufacturing concerns was reported to be held as to 58 per cent in Canada, 31 per cent in the United States, and only 10 per cent in Great Britain. In this connection it may be noted further that out of the total of Canadian bond issues in 1914, twelve per cent was placed in Canada, twenty per cent in the United States, and 68 per cent in Great Britain, whereas in 1925, the year of the embargo on overseas issues in London, only one per cent was placed in this country, while 42 per cent was taken up in the United States and 57 per cent in Canada. This change over may be attributed not only to geographical and economic propinquity but also to the greater accumulations of free capital in the United States and the definite cultivation of Canadian demand for funds available in the American capital market.

The phenomenal development of Canadian industries may be expressed in eulogistic verbal descriptions, which are usually inaccurate and frequently unimpressive, but the following indices of the growth of Canadian economic resources over a comparatively short period are far more convincing and quite as attractive. It must be remembered however in studying this table that figures expressed in dollars are

subject to the reservation that the price level was much higher in the later years than in 1911. Taking the average for 1913 as 100, the figure for 1911 was 95, while the index numbers for 1923, 1924 and 1925 were 153, 155 and 160 respectively.

(000 omitted.)

	1911	1923	1924	1925
Population	7,207	9,083	9,227	9,364
Value of field crops	$ 384,514	899,166	995,236	1,153,395
Capital invested in industry ..	$ 1.247,584	3,380,322	—	—
Products of industry	$ 1,165,976	3,051,457	—	—
Mineral output	$ 103,221	214,079	209,583	228,440
Freight on steam railways ..	tons 79,884	118,290	106,429	—
Bank deposits	$ 980,434	2,107,606	2,130,622	2.221,161
,, clearings	$ 9,275,139	17,332,632	17,008,039	16,761,512
	(1911–12)	(1923–24)	(1924–25)	(1925–26)
Imports for consumption (years to March 31)	$ 522,405	893,367	796,933	927,403
Exports of domestic produce (years to March 31)	$ 290,224	1,045,351	1,069,067	1,315,193

It will be obvious from this display of growth that events in Canada should be watched closely by all interested in world economic affairs. Consequently the return to a full gold standard as from July 1 last is not a matter to be brushed aside as of comparatively small importance. Ever since the outbreak of the war gold exports had been prohibited and the notes issued by the Dominion Government had been inconvertible. The Canadian dollar had been round about par with gold for two or three years, and for some time the Government had followed a liberal policy with regard to the granting of licences for gold exports, so that gold had moved in fairly large quantities over the border to and from the United States in adjustment of temporary movements in the exchange beyond the gold points. Since July 1, 1926, however, with the expiry of the previously existing legislation on the subject, gold has been absolutely free to move into or out of the country without let or hindrance. Canada has joined its neighbour and its colleagues in the British Commonwealth of Nations on a full gold standard.

Contrary to the feeling in Great Britain, where the return to gold was widely criticized as premature, the corresponding step in Canada was held by many people to be unduly belated. This question is now a matter of history, but it is none the less interesting to consider the essentials to a successful return to gold as the monetary standard, and how far those necessary conditions were present in Canada at the time the step was taken.

The first requisite is that, assuming the continuance of the existing monetary unit, the commodity price level should be on a par with that existing in countries already on the gold standard. On this point little need be said, for the official index number of wholesale prices in Canada averaged 160.3 in 1925 as compared with 158.7 in the United States and 159.7 in Great Britain, the average for 1913 being taken as 100 in each case. The cost of living figure was indeed substantially lower than in either of the other two countries. It may be assumed therefore, since no material rise in prices has occurred this year, that the volume of money in circulation in Canada bears roughly the same relation to the volume of trade, allowing for differences in the relevant economic and social conditions, as in other gold standard countries.

Another essential is the possession of a gold reserve which may be considered adequate to meet all feasible demands for export in the event of a rise in Canadian prices relative to the world level. The banking and currency position thus calls for some inquiry. The figures for April 30 last show that on that date the total of notes of the Dominion Government in circulation, other than those held by the banks, was $143 millions, while the net circulation of notes of the eleven chartered banks amounted to $149 millions. Against this aggregate of $292 millions the Government held $87 millions of gold, while the banks had on deposit in the central gold reserve $21 millions and in their own vaults say a further $50 millions, representing in all a gold reserve of about 54 per cent. To make the figures for the banks more inclusive, the private deposits in Canada amounted on April 30 to $1,878 millions, and against these, together with notes in circulation, the banks held a cash reserve of

about 12½ per cent. Consequently there was nothing in the currency and banking situation to warrant any fear that Canada might not be in a position to maintain the gold standard.

Another important consideration in this connection is that Canada has of late years sprung into a leading position as a gold producer. The output is increasing rapidly, having doubled since 1920, whereas in the United States it is declining and in South Africa it is barely keeping up to the level of the past few years. In 1925 gold to the value of nearly £7½ millions was mined in Canada, an increase of £1 million over 1924 and of £2 millions over 1923. Only two countries, South Africa with £41 millions and the United States with £10 millions, were ahead of Canada last year, and on present tendencies it appears not unlikely that Canada may reach second place within a comparatively short period.

A third essential to the maintenance of the gold standard is that the Government should be in the position of balancing its budget, at least for current outgoings, or that its deficit, if any, should certainly not exceed a sum which can be covered out of the actual savings of the people. In Canada a budget surplus is now the normal outcome of the Dominion Government's financial operations, while the provincial governments have shown marked improvement in this respect during recent years and deficits have almost disappeared, despite the fact that expenditure is on a high level. The result of the Dominion Government's operations during the financial year to March 31 last was a surplus of nearly $34 millions and a reduction of $22 millions in the net public debt, which on March 31 amounted to roughly $2,400 millions or about $250 per head.

With these essentials, together with the fact of the return to gold, in mind, it is interesting to turn to a consideration of the character and distribution of Canada's trade. Some impression of the growth of trade has already been given in tabular form, but a good indicator of the relative importance of different industries is provided by population figures. According to the census of 1921, only one-quarter of the population of Canada lived in cities and towns of more than 25,000 inhabitants and less than one-half in towns, cities and incorporated villages of all sizes, so that the country may be described as predominantly rural. So far, however, a large part of the area is undeveloped. Figures compiled in connection with the 1921 census show that of the total land area only 10 per cent was occupied by farms, one-half of this small proportion consisting of improved land. Even these figures show material progress over earlier years, for in 1901 the area covered by occupied farms was only 4½ per cent of the total, with less than one-half improved; and ten years later the proportion had risen to nearly 8 per cent, 45 per cent of which was improved.

Some idea of the relative importance of different branches of Canadian economic life may be gathered from the fact that in 1923 the value of field crops produced in Canada was $899 millions and of manufactured products $3,051 millions. Mineral production, of which coal and gold formed the most valuable items, reached $214 millions, and it is interesting to note in this connection that Canada produces 90 per cent of the world's cobalt, 88 per cent of the world's asbestos, and 80 per cent of the world's nickel. The value of fish landed was $43 millions and the value of primary forest products $197 millions. As an example of the growth in importance of Canadian manufactures the phenomenal development of the newsprint industry may be mentioned. In 1913 the production of newsprint in Canada was only 350,000 tons, while by 1925 the output had grown to 1,500,000 tons, a figure as high as the comparatively stable output of the United States. The bulk of Canadian newsprint is exported to the latter country. It remains true however that for the most part Canadian manufactures are for home consumption, for according to the external trade figures 44 per cent of the domestic exports in the calendar year 1925 consisted of agricultural and vegetable products apart from chemicals, fibres and wood, and 15 per cent of animals and animal products. Wood, wood products and paper comprised 21½ per cent and minerals and their products 15½ per cent of the total. It is probable, however, that manufactures will in the future comprise a growing proportion of Canada's products. Apart altogether from the natural development of industry, the provinces of Quebec and Ontario have recently announced as part of their policy their opposition to the export of hydro-electric power to the United States. This action has already had the effect of inducing some United States firms to transfer a part at least of their manufacturing activities to Canada, and it appears likely that this movement may continue to add to the Dominion's productive capacity.

The geographical distribution of Canada's external commerce provides an interesting example of the theory of so-called triangular

trade. It is customary for Canada's exports to Great Britain to be substantially in excess of imports from this country. On the other hand, imports from the United States usually exceed exports thereto. The two phenomena are balanced by remittances from London to New York through the ordinary channels of the bill market.

The value of Canada's external commerce was exceeded in the year 1925 by that of only five other countries, while export trade, with a population of only 9½ millions, is now in excess of the 1899 exports from the United States, which then had a population of 75 millions. The yearly trade figures now show a surplus of exports. Before the war this was not the case, for Canada was borrowing heavily and thus financing greater imports than her merchandise exports alone would justify. Now, however, with greater domestic capital accumulations and heavy interest payments to make to external holders of Canadian securities, substantial export surpluses have become the rule. For the past four years this has been the case, and the visible balance in favour of Canada in the year to March 31 last exceeded $400 millions, as compared with about $280 millions in the preceding twelve months. On a total external trade of $2,260 millions in the past fiscal year and $1,880 millions in the preceding twelve months these figures represent an extraordinarily large surplus.

For two essentials to continued development of resources Canada is dependent very largely on external supplies. Men and money must both be furnished to a great extent by countries with a surfeit, comparatively speaking, of human power and capital. Canada's population at the present time contains a large proportion of men in the prime of productive life. According to the 1921 census males outnumbered females to the extent of 45 to 42½, while 42 per cent of the males were between the ages of 20 and 49. Furthermore, Canada has immense power resources in the shape of water supplies suitable for the generation of electricity. Production costs are therefore materially lower than in coal-using countries, and already Canada is far ahead even of the United States in the use of electric current. It follows that if development based on those human and physical resources is to continue, the supply of virile manhood must be not only maintained but reinforced. The need in particular is for agricultural workers and domesticated women. Yet immigration is on a substantially lower scale than before the war, as the following table shows:—

Immigrant Arrivals in Canada.

(000's omitted.)

Fiscal year	From United Kingdom		From United States		From Other Countries		Total
	Number	% of Total	Number	% of Total	Number	% of Total	
1912	138	39	134	38	82	23	354
1913	150	37	139	35	113	28	402
1914	143	37	107	28	135	35	385
1921	74	50	48	32	26	18	148
1922	39	43	29	33	22	24	90
1923	35	48	22	30	16	22	73
1924	73	49	21	14	55	37	149
1925	53	48	16	14	42	38	111
1926	37	38	19	20	40	42	96

It will be noticed that the proportion of immigrants from the United Kingdom has been higher, even on the lower absolute figures, since the war than before.

From whatever angle the position in Canada is regarded, the vision is one of substantial and well-grounded prosperity. The immense developments in the utilization of the resources of the soil and the depths of the earth, as well as the growth of industry, based largely on water power, are seen to be no mushroom growths removable by the flick of a finger. The foundation appears to be sound and progress to have been achieved on the whole by conservative methods. Given money and the right type of men, there are present all the elements of continued success and sustained growth in wealth and well-being, provided the hopeful prospects are not marred by speculation founded on exaggerated expectations.

Two German scientists, Professor Dannmeyer, from Eppendorf light Institute, and Dr. Georgi, meteorologist at the Deutsche Seewarte at Hamburg, returned to Copenhagen recently from an expedition to Iceland, where they investigated wind, light and weather conditions to a height of 13 miles, particularly over Denmark Strait, with a view to ascertaining the feasibility of a regular air route between Europe and America *via* the Faroe Islands, Iceland, and possibly Greenland. They express the view that the route is practicable, and that its possibilities are good. The journey would probably occupy a day and a half to two days, starting from Copenhagen or Hamburg and staying overnight at Reykjavik. They will resume their investigations next season with a larger expedition.

An Electrical Letter.

Unnecessary Types of Lamp Bulbs.

London, 1*st October*, 1926.—Attention is drawn in *The Electrical World* to the prevalent use of electric lamps with bulbs of special design, which are expensive and often unnecessary. In domestic lighting, for example, there are few occasions when the standard form of bulb will not do all that is required. It costs less than the exceptional types, is usually more efficient, and is more durable. Although "spherical bulb" fixtures often form one of the chief elements in exhibitions and displays, probably only 9 per cent of the lamps used for domestic lighting have such bulbs. If all lamps in the home were properly equipped with shades or enclosing media standard lamps could be used in practically all sockets.

In large interiors—ballrooms, hotel lobbies, etc.—unshaded lamps in the smaller sizes may be permissible if the bulbs are obscured. In such cases spherical or tubular lamps may be justified for the sake of appearance. Nevertheless, their use is often overdone, and in many cases standard types of lamps might equally well be used. In the same way tubular lamps are often used on chandeliers, when much better results would accrue from the use of standard types. From the standpoint of the lamp company the multiplication of types is a drawback, as it is well known that concentration on a few types is favourable to cheapness, efficiency and durability. As a general principle it may be urged that the time for exposed lamps of any kind, even if bulbs are obscured, has gone by. Much more satisfactory lighting conditions are obtained when lamps are concealed by suitable shades, or glassware, of which there is now a great variety available. Assuming that lamps are covered in this way, there is naturally no object in departing from the standard type. Monotony in lighting is not desirable. But it is chiefly in the choice of shades, glassware and encircling media, that the opportunity for variety occurs.

The Need for Up-to-date Conditions in Music Halls.

A theatre manager, in a contribution to *The Daily Express*, remarks that theatres throughout the country seem to be flourishing. But the decay of the music hall is, he says, apparent everywhere. He attributes this partly to the fact that the provincial taste is higher than formerly, and a more elaborate entertainment is expected.

"Another point is that most of these theatres are out of date compared with their younger rivals. Until theatre proprietors recognize that hard pit and gallery seats, bad acoustics, and meagre lighting are things of a past generation the public will continue to ignore them in favour of the more modern halls."

One is glad to note the importance attached to good lighting. In the recent discussion before the Illuminating Engineering Society instances of many excellently lighted provincial halls were given. But nevertheless there is a great deal of leeway to be made up in the lighting of many provincial entertainments. The ease of modern transport is a factor to be reckoned with. People in the provinces come to London much more frequently than in the past, and, naturally, are quite alive to any deficiencies in local places of entertainment as compared with those in the Metropolis.

Artificial Lighting of Tennis Courts.

The artificial lighting of indoor areas for badminton and lawn tennis still forms one of the most baffling of problems. We notice that a paper on this subject is being read at the Convention of the American Illuminating Engineering Society and it was discussed before the Society in London a few years ago. Experiments on the lighting of badminton courts are now being made at the Alexandra Palace and elsewhere, and at the Queen's Club the illumination of covered lawn tennis courts has been closely studied, though we believe that the problem is regarded as by no means completely solved. One of the chief difficulties in lighting the large area required for covered lawn tennis courts is the expense, but in the case of the smaller area needed for badminton courts the difficulties in this respect are less severe. As badminton is primarily an indoor game the need for good artificial lighting is evident.

Recent Developments in Portable Lamps.

There has recently been a marked development abroad in craftsmanship of lighting fittings, especially those of a small and portable nature for domestic use. In a recent contribution to the *Suddeutsche Elektro-Anzeiger* Margarete Bannerman comments on the extraordinary variety of materials now employed,

and the constant striving after novel and artistic effects. Such media include alabaster, painted glass, lustres and pearls, and many new varieties of glass giving pleasing effects. Pressed paper and coloured paper are also being put into service and Japan is reviving the use of picture-silk for lighting fittings. Portable and basket lamps in great variety are being introduced, but the table lamp has been singled out for special attention. Some of these utilize delicately moulded figures as the support, the luminous element being incorporated into the design. Sometimes the lamp is combined with some other object, such as a clock, an hour-glass or an ash-tray. Yet another device is the use of artificial silk flowers, illuminated from within. Amongst the more costly lamps may be mentioned those of silver-work with delicate silk shades. There are signs of a return to the practice of the middle ages, when ornament was frequently lavished on a lamp so that it served as an artistic creation and a costly present.

Advances in the Lighting of Tea Shops.

To the young generation the multitude of tea shops available and constantly increasing in London and other large cities is a familiar feature. But there are many older people who can remember when there were practically none, and when the first pioneering shops opened by leading caterers were a complete novelty and a surprisingly successful one. Recent years have been marked by a continuous advance in the comfort and efficiency of such establishments. The lighting and general style of decoration of shops of the leading caterers has been very much improved. One significant change is the adoption of overhead enclosed fittings of diffusing glassware, some of a pleasing decorative type, which represents a great advance over the orginal shallow opal shades and barelamps, both as regards amount of illumination and freedom from glare. A distinctive style of exterior lighting, applied to all its branches, is a most valuable advertisement for a multiple-shop concern. The educational value of a wholesale change of this kind is also considerable, as rival establishments are driven to "sit up and take notice".

Demonstrations at Toronto University.

At Toronto University, where a general course on illuminating engineering has been given for some years, a new departure—the organization of a Lighting Demonstration Room—is now in hand. This is intended to serve both as a laboratory for students and as an exhibit open to the general public, who, it is suggested, will appreciate this opportunity of examining the latest forms of lighting fittings without being in any way pressed to make purchases. Typical methods of lighting, good and bad arrangements, and up-to-date lighting fittings for the home are to be on view, and exhibits will be explained with the aid of tests with illumination-photometers. Similarly the effect of artificial daylight units will be shown with the aid of the colorimeter. This new departure is receiving support from leading manufacturers. We understand that a similar demonstration room has been in existence for some years at the Massachusetts Institute of Technology, Boston.

Electric Incubators.

In the *Electrical World* H. H. Dunn describes the working of an electric incubator capable of hatching 3,000,000 chicks yearly. Electricity maintains heat at 103°, turns the eggs over six times every 24 hours, and starts illumination of the entire plant promptly at six o'clock every evening. It also drops the door to each compartment at the end of the 21st day so that the hatched chicks may have light and air, and then turns on the heat in the huge brooders, to which 560,000 chicks of each setting are transferred.

Upon reaching the incubator the eggs are passed, one at a time, before an electric testing lamp. Unfertile eggs are eliminated by this "egg X-ray" method and are sold to bakers and other large consumers. This use of light to determine whether eggs are fertile or not is particularly interesting.

The British Post Office authorities have entered into a contract estimated to produce £250,000 annually, whereby advertisements relating to commerce, municipalities, hospitals and societies will be embodied in postmarks placed on all letters. Surely this is a valuable hint for the Posts and Telegraph Department of India, who year after year state that they are working at a loss. Additional revenue is what is required, and here is an unexplored source.

Notes from London.

The British Association Meeting.

London, 1st September, 1926.—The meeting of the British Association has this year attracted an unprecedented amount of attention, and has doubtless served its purpose of stimulating public recognition of the value of science. One of the chief features this year was the delivery of the Presidential Address by H.R.H. The Prince of Wales on August 4th.

Science and the State.

The Prince, in his address, traced the relations between science and the State in this country. He recalled the second meeting of the Association, held in Oxford in 1832. At that time science did not receive the general recognition it has since won. In fact, Keble, expressing resentment of a section of the University at the bestowal of honorary degrees on certain eminent scientists, referred disparagingly to the "hodge-podge of philosophers" thus honoured! This "hodge-podge" included some very distinguished names—David Brewster, Robert Brown, John Dalton, and Michael Faraday. Each of these men has left his mark on the history of his own special department of science. Brewster's researches into optics were his greatest scientific achievement, Brown's services to botany were unsurpassed, Dalton's name is for ever associated with the atomic theory. Faraday's labours provide one of the most wonderful examples of scientific research leading to enormous industrial development. It is said that two million workers in this country alone who are dependent on electrical industries are living on the brain of Faraday; but to his discoveries many millions more owe the uses of electricity in lighting, traction, communication, and industrial power.

The influence of science on the daily life of the community has also done much to remove the mistrust of it, as being somehow allied to the Powers of Darkness. Yet as late as 1859 science was still in a humble position. The Prince Consort, as President in that year, expressed the hope that "by the gradual diffusion of science and its increasing recognition as a principal part of our education, the public in general, no less than the Legislature and the State, will more and more recognize the claims of science to their attention, so that it may no longer require the begging-box, but speak to the State, like a favoured child to its parent, sure of its parental solicitude for its welfare."

The position foreshadowed in these words has now been in a large measure attained. Progress was visible towards the end of last century in the establishment of the National Physical Laboratory, whose researches have since been of great value to many Government Departments. In historical sequence comes the Development Commission, established in 1908. The Rothamsted Station has developed its work to include the study of the whole field of nutrition and disease in the plant, with valuable results to agriculture.

Next in historical sequence we have the Medical Research Committee, established in 1913 (now the Medical Research Council). Under the new conditions the State is actively concerned with the promotion and co-ordination of medical research towards the conquest of infirmities. As examples of progress the Prince referred to insulin, the discovery of vitamins, and the sunlight treatment. He alluded to the hope of penetrating the secret of cancer, as a result of recent microscopical researches. Closely linked with the discovery of vitamins has been the recent development of knowledge regarding the relation of sunlight to health. Sunlight, or its artificial equivalents, have some importance already in the treatment of disease; a realization of its significance for health has a much greater importance in preventive hygiene. But patience and caution are as necessary as ever and exacting technique is in process of development.

Turning to the part played by science in the Great War, the Prince pointed out that if applications of science had added to the distresses of warfare they had also helped in their alleviation. The creation of the Department of Scientific and Industrial Research was an act which falls historically within the period of the war, but was an outstanding incident in the scientific advancement of national affairs. By an odd freak of history it needed the whole period of a century between one great wartime and another—from the Napoleonic to the Great War—to mature the conception of a State Department of scientific research. In this connection the Prince referred to the fear expressed when the Department was originated that the freedom of research might be imperilled; but modern developments had dispelled this fear. The progress of science cannot be

kept entirely within training walls, and no one wants to keep it so. Various applications of the work of the Department were mentioned, special reference being made to that of the Building and Food Investigation Boards, as instance of a matter of vital import to daily life.

A feature of all this work was the co-operation with various centres of research, such as the National Physical Laboratory and the laboratories at Oxford and Cambridge. At Cambridge a University low-temperature research station has been established. Other directions of research which touch upon commonplaces in our daily life are those concerned with fuel, illumination, and with the deterioration of fabrics and the fading of colour stuffs.

In conclusion, the Prince referred to activities in the Dominions and Colonies, which were themselves actively engaged in research, and recalled that Sir William Huggins, in his Presidential Address to the Royal Society in 1901, had remarked that "assuredly not only the prosperity but even the existence of this Empire will be found to depend upon the more complete application of scientific knowledge and methods to every department of industrial and national activity." To-day we see that application in much fuller progress than when Huggins spoke only a quarter of a century ago, and already we know how truly he prophesied.

ENGINEERING AND TECHNICAL PROBLEMS.

The very large number of papers read in the different sections was calculated to illustrate the wide range of modern science, but renders it impossible to do more than briefly mention some of those most likely to be of interest to our readers.

In the Engineering Section chief interest attaches to the Presidential Address by Sir John F. C. Snell on "The Present and Future Development of Electricity Supply". Sir John traced in detail the various stages of progress from 1889 onwards. A striking comparison was made between some figures put forward by Colonel Crompton 32 years ago and those applying to-day. The ideal cost of production was then assumed to be 1.32*d*., excluding capital charges, and the average price to consumers 3*d*. per unit; the load factor was taken at 20 per cent, and the capital outlay at £125 per kilowatt installed. At present the average revenue from all classes of consumer is 1.75*d*. per unit, the average station load factor 29 per cent, and the capital outlay £52 per kilowatt. It has been estimated that between the next 15 years the output of electricity in Great Britain may reach 21,000,000,000 units, and the author showed that there was every reason to expect that this figure might even be exceeded. Assuming an average price per ton of coal delivered to supply stations at 20*s*. per ton, it is safe to say that the *average* price at which electricity should be available within a few years should be under 0.90*d*. per unit. This might be expressed in the following terms when applied to various classes of consumers:—

Alternating current energy transmitted in bulk to large consumers, such as railways and large industries, from 0.5*d*. to 0.25*d*. per unit; alternating current energy distributed locally for general domestic purposes, including lighting, about 0.8*d*.; lighting only, about 2*d*.; small power supplies, about 1.25*d*. per unit.

In the concluding part of the address special reference was made to rural development, to the pioneer work in this field of Mr. Borlase Matthews, and to the valuable research work being conducted by the B.E.A.M.A. Research Association, the National Physical Laboratory, the Fuel Research Board, and other bodies.

Mr. Borlase Matthews himself also contributed a survey of progress made in electric ploughing, and the problem of refrigeration applied to the transport of foodstuff from abroad was also discussed. A paper dealing with Mass Production of Motor-cars was read by Mr. A. A. Rowse (Morris Motors), who illustrated his remarks by films showing processes of assembly. It was mentioned that in a Morris car there are as many as 10,000 parts, so that the complexity of the problem can be imagined. Mr. H. E. Wimperis dealt with the "Auto-Giro," or the rotating wing in aircraft, and discussed the future possibilities of safe and rapid vertical ascents and descents by the helicopter type of machine.

In another section a paper was read by Mr. A Stephenson on Accidents in Industry. It was mentioned that in the United States accidents cost a billion dollars annually. It is estimated that 85 per cent of these accidents are preventible, and the author suggested various methods of training employees entering industries, which may help. Amongst these may be mentioned practice on dummy machines, so that correct and safe motions may be acquired.

PHYSICAL AND MATHEMATICAL SCIENCE.

One of the most interesting items in this section was the address by Professor A. Fowler on "Spectral Analysis". Nothing is more remarkable than the manner in which the applications of spectroscopy have broadened out. Originally serving as an aid to chemical research,

it enabled us to obtain some knowledge of elements present in distant suns and stars; but at the present day it is also enabling us to make deductions as to their physical properties. Applied to chemical substances, it may yield information on their properties, for instance their valency, besides identifying them. Professor Fowler foretold that in the future it might be possible—so closely are the properties of elements and their spectra related—to calculate the lines in the spectrum more exactly than they can be observed.

The X-ray analysis of crystals was dealt with by Sir William Bragg and his son, and Sir Ernest Rutherford and Dr. Chadwick surveyed recent work on the bombardment of atoms with alpha rays. A paper by Mr. W. W Garret dealt with the fascinating problem of the transformation of elements by low-voltage discharges, referring particularly to the reported transmutation of mercury into gold. The earliest example of transmutation was the artificial production of helium and neon in X-ray tubes in 1912, reported by Ramsay, but apparently still the subject of discussion. Another case is the transmutation of mercury into gold, announced by Miethe in 1921. Other workers have reported results of a similar nature, though the amount of gold and silver obtained was minute. The author's own researches, however, have not yet confirmed the effect.

An interesting paper by Mr. R. Campbell Thomson on "Science of the Assyrians in the Seventh Century B.C." showed that at this early time quite substantial scientific knowledge existed. Comprehensive botanical lists and medical prescriptions have been found amongst remains, and the acquaintance of the Assyrians with mathematics and astronomy was considerable. They could, for instance, foretell lunar eclipses. It is probable that our day of 24 hours and our hour of 60 minutes were of Babylonian origin.

Finally, we may note the contribution of Professor H. H. Turner dealing with the total eclipse of the sun which is to take place soon after sunrise on June 29th, 1927. A total solar eclipse has not been visible in this country for 200 years, and even this one is of very short duration. Astronomers will only have 20 to 25 seconds in which to make their observations. The eclipse will be total on a line extending from Southport to West Hartlepool.

Education.

The place of science in education was the subject of a discussion in Section L. A noteworthy contribution was that of Professor C. H. Desch, of Sheffield University, who deplored the tendency towards specialization. More attention should be paid to the history of scientific thought and discovery in order to broaden the outlook, and there was a place for the history of science in the general training of students in arts and sciences. At present the old idea of a liberal education is being lost sight of, and graduates of science may reach a high standard in their special subject whilst remaining profoundly ignorant of literature and history.

Sir Thomas Holland, in his discussion of Methods of Science Teaching, drew attention to the advantages of the "Tandem" system adopted at the Imperial College of Science, whereby students are allowed to deal in succession with their various subjects, acquiring a thorough mastery of each, instead of attempting the study of a number simultaneously.

Interesting contributions were by Dr. C. W. Kimmins on "The Cinema in Education" and Mr. J. C. Stobart on "Teaching by Wireless". The educational possibilities in both cases are very great. Dr. Kimmins described the preparation of educational films at Yale University, and allusion was made to the value of the film in recording great events, such as Arctic exploration and the ascent of Mount Everest. Wireless offers the method of education by which the largest possible number of people can be instructed simultaneously. In the discussion an interesting account was given of the part played by broadcasting in Nigeria, where practically all the natives are dependent on the spoken word.

Miscellaneous Subjects.

The foregoing represent only a few out of a very large number of papers of a more or less directly technical and engineering character. In other fields of science there were many contributions dealing with outstanding fundamental problems. Of these, the discussion opened by Sir Daniel Hall on "Population and Food Supply" was arresting. From the evidence available, the problem seems at the moment both menacing and insoluble. It would appear that the development of food-producing areas cannot keep pace with the increasing population. The chief consolation is that the problem is an old one, and that earlier investigators foresaw a crisis even before present times. It may be hoped, therefore, that science will ultimately enable us to intensify present methods of food production,

and to find others, and thus to stave off danger again in the future.

Professor H. F. Osborn, in opening the proceedings of the Section of Zoology, dealt with the "Origin of Species". Other papers which have excited considerable comment were those of Sir Josiah Stamp on "The Inheritance of Wealth" and of Sir Lynden Macassey on "Some Economic Aspects of the Labour Outlook".

There was quite a series of papers dealing with Racial Evolution, the Future of Native Races, and kindred problems. There were accounts of the discovery of the famous Neanderthal skull by Miss Garrod, of cosmetics other objects found in Tutankhamen's tomb, of excavations in Sparta, and of discoveries in the great Gobi Desert.

These and other papers showed the far-reaching field of modern science. The wide dissemination through the press of information presented on the most diverse subjects should help towards the correction of the tendency towards "over-specialization," to which several of the contributors referred.

Population and Food Supply.

Sir Daniel Hall, President of the Agricultural Section of the British Association for the Advancement of Science remarked as follows :— "The relatively greater prosperity of manufacturing industry which increases the drift from the land to the town is a factor making for ultimate shortage of food supplies. Only a considerable rise in food prices is calculated to check the movement, and any such rise would have results of the most serious character. So far as the British Empire is concerned, the question of population and food sufficiency for a century or two, will only be a source of anxiety if wisdom fails to keep pace with economic need." Sir Daniel Hall says, the only possible solution is to encourage intensification of production aided by the results of scientific research as necessary land is not available. In the opinion of Lord Bledisloe, 15 to 20 per cent of the food crops of the world is lost to the ravages of insects which could be avoided by at least 50 per cent by the application of fertilizers.

Economic Notes.

Indian Currency Bill.

Uncompromising opposition to the majority of recommendations of the Currency Commission is expressed by the Indian Merchants' Chamber in submitting their views on the Currency Bill to the Government of India, Finance Department. The gold bullion standard is absolutely unacceptable to the Chamber even if temporarily satisfactory assurances regarding the following two questions were forthcoming :—

(1) Do Government propose to make statutory provision for the free inflow of gold into India for monetary purposes, without any let or hindrance, or any discreation to the currency authority to divert the balance of trade in favour of India by purchasing what are called gold securities abroad?

(2) Are Government prepared to undertake that when India has adequate gold reserves, Government would introduce a gold currency in India, when the Legislature of India ask for the same?

Coming to the Bill itself, the Chamber enter their emphatic protest against the 18 pence ratio because it was a ratio that will be extremely harmful to millions of producers in this country. That the Commission should have merely tried to find out arguments in support of this ratio, in the Chamber's opinion, shows that the Commission has failed to take an impartial view of the question and merely considered it its duty to give its blessing to the rate which Government had already fixed upon as their objective. The Chamber also consider that the Commission entirely failed in its duty when it lightly passed over the principal objection that a standard of money payments should not be trifled with, because it would vitiate all contracts.

The Chamber then set out their reasons for disagreeing with the modifications of the Indian Coinage Act and the Indian Paper Currency Act is proposed in the Bill, and urge that the same be recast to conform to the ratio of 16 pence, as otherwise the Chamber apprehend a very serious economic crisis in this country at no distant date, with the further fall of world prices which is under way to-day. They would therefore recommend that instead of the rupee being now rated at 8.47512 grains, it should be rated at 7.53344 grains and further

urge that the sovereign and half sovereign should continue to remain legal tender.

Concluding with a reference to "The rapid depletion of our none too large reserves, which may once more be made ground for refusing to place India on gold standard," the Chamber ask "Do Government really desire to put this country on a gold standard? If so, is the depletion of India's reserves the best way to do it? Is it that they consider the ratio far more important than the standard, and will keep the rupee at 18 pence whatever the loss to our reserves? Is the country once more to be foiled in its aspirations to be placed on a real gold standard?"

Indian Trade Propaganda.

It is in the best interests of India's trade that an intensive propaganda for popularizing Indian goods should be carried on both in India and in England, says the *Pioneer*. Enquiries for information about Indian articles are constantly received by us, and they often reveal unsatisfactory publicity arrangements by producers. The only person who can supply information about Indian trade is the Director of Commercial Intelligence. Newspapers, on account of the limited space at their disposal, cannot always undertake the broadcasting campaign on behalf of manufacturers, and there are occasions when they themselves cannot obtain the necessary information. India's goods should be properly advertised not only in India but in England, and in the foreign countries. The cost will be trifling compared with the trade prosperity that will result. The finest of goods may be produced in India, but if nothing is known of them business will be necessarily restricted.

India and Preference.

The Times writes:- Testimony to the value to India of the Imperial preference policy of Mr. Baldwin's Government is given in the interesting report for the last two years of Mr. H. A. F. Lindsay, the Trade Commissioner. He describes this policy as one of two influences which have operated to stimulate the demand for Indian goods in the United Kingdom, the other being the effect of the British Empire Exhibition at Wembley. Empire tea pays five-sixths of the full rate of 4*d*. per lb., and this concession has been a substantial factor in raising the importers of Indian tea into the United Kingdom from 255,000,000 lbs. in 1922 to 291,000,000 lbs. last year. It is true that the average consumption of tea per head of population has risen in the period from 8.66 lbs. to 8.85 lbs., but there has been a substantial decline in shipments from non-Empire sources. The China trade, formerly so great, amounted last year to little more than 10,500,000 lbs. The shipments from Java show considerable fluctuation, but dropped from 42,500,000 lbs. in 1924 to less than 39,500,000 lbs. last year. The imports of Ceylon tea, on the other hand, have risen from 121,000,000 lbs. in 1923 to nearly 134,000,000 lbs. last year.

Effect on Silver.

The *Financial News*, which is edited by Commander Hilton Young, Chairman of the Currency Commission, draws special attention to an article in the *North China Daily News*, combating the idea that the recommendations of the Commission are calculated to have a disastrous effect on silver. The China journal points out that the Government of India has not been a buyer of silver for the past seven years, and has therefore been a factor with which silver producers have not reckoned. The contention that silver prices will suffer through its absence from the market is therefore invalid. The paper further states that the effect of the Commission's recommendations upon the silver market is limited to the possible extent of the sales of silver by the new Reserve Bank, which might deem it expedient to dispose gradually, within ten years, of a portion of its silver, provided that it reaches a certain limit. This would mean that if silver rupees went into circulation to a larger extent than at present, there would be no sales of silver by the Bank. The *Financial News*, commenting on the article, observes that it is always unwise to underestimate the importance of sentiment as a factor in controlling the movements of a market like that for silver, and it therefore commends the arguments of its China contemporary, which, it says, destroy some of the most widespread misconceptions of the Commission's report

Mineral Concessions Granted in Burma.

According to the Report on the Mineral Production of Burma for the year 1925 the number of concessions granted during the year was 245, of which 186 were new concessions to prospect for minerals, 93 renewals of previously granted prospecting licenses, and 16 mining leases. The total number of concessions held on the 31st December, 1925, was 429 of which 239 were held under prospecting licenses and 190 under mining leases.

Technical Education.

The *Pioneer* writes:—All over India the provision of vocational and technical education has developed rapidly within recent years and a number of institutions for giving training in these subjects have come into existence. Full advantage of them is however not taken by the class of students for whom they are intended. Complaints are made that the two first class engineering colleges that exist in the United Provinces are chiefly utilized by outsiders. Probably the halo of University education still has an attraction for young men in these parts. Conditions are different in Bengal and Bombay where there has been a reaction against a purely literary type of education. For some years the principal difficulty of advanced technical education has been the lack of suitable openings for boys who had passed through various engineering colleges. But the difficulty is gradually passing with the expansion of Indian industries. At the present moment there is a need for institutions which can give technical training to boys who cannot attain the standard required by the existing technical schools and colleges. It is true that a broad general education is the best preparation for all forms of technical training, but it is equally true that when a boy has shown special skill for a certain kind of work, he should be given every facility for developing his natural tendencies. The necessary general knowledge he can acquire while at work in the factory.

Silk from Shell-Fish.

Silk stockings made out of insects and shell-fishes! This is the latest German scientific achievement, an eerie feat performed by Professor Herzog and Dr. Kunicke, of "The Kaiser Wilhelm Institute for Fibrous Material Chemistry". The part of the insect which is used for the production of artificial silk is called "chitin," which is "the white, anorphous horny substance forming the harder part of the outer integument of insects, crustacea and other invertebrates." It gives their bodies a certain resisting power in the absence of skeletons. How durable it is may be gathered from the lengthy periods during which insects are preserved when pinned to cards in museum show-cases. Professor Herzog and Dr. Kunicke have been busy for years with experiments, in which they worked on the chitin obtained mainly from insects and shell-fish. From this they made a certain substance in a still secret manner, and eventually they succeeded in spinning it into fine, lustrous threads. These threads have all the appearance of silk, but are of a much stronger and more durable quality. It is hoped that this new source of supply will do much to restore German silk production to something like the pre-war amount. Before the war Germany was responsible for one-fourth of the world's supply; now the figure has fallen to one-tenth, while in other countries it has gone ahead rapidly. Various species of chafers are aggravatingly plentiful in the Fatherland, and now there will be a profitable reason for war against them. Instead of destroying them, people will gather them and hand them over to the German "labs" to be made into silk for shimmering stockings and rustling silk dresses!

Infantile Mortality.

The Medical Officer of Health of London has just issued his annual report, in which he estimates the population of that great city at 4,612,000 in 1925. The marriage rate was 17.2 per thousand, the birth rate 17.9, and the death rate 11.9. The chief point in the statistics is the remarkable decrease in infantile mortality from 170 per 1,000 in 1899 to 68 in 1925. This is a very marked decline, and is attributed to special sanitary measures and increased maternity and child welfare activities in all parts of London. The infantile death rate of Bombay City is 556 per thousand, which is an instance of the urgent need of child welfare work in the slums of the city. In Karachi the figures for infantile mortality are also high, though various health organizations are constantly at work with a view to reducing the number of infants that die every year from preventible causes. Doctor Shroff, our Health Officer, will shortly return to Karachi after a visit to England, and no doubt he will have some new ideas that will materially assist the public in their fight against disease, especially among infants.

A New Disease of Cotton.

The following is from the Digest of Operations of the Department of Agriculture, Madras, in July 1926, issued as Digest No. 48:—In the year 1923 a crop of Uppam cotton, grown on the Central Farm, Coimbatore, was found to be attacked by a boll disease. The bolls showed soft discoloured sodden spots and in them were found concentric rings formed by minute dark spots. The affected bolls failed to develop properly and in many cases failed to burst. A count taken showed that over 80 per cent of the bolls were attacked and the damage done was so severe that the

crop had to be abandoned and the plants pulled out.

The fungus.—Examination of a number of diseased bolls revealed the presence of a fungus called *vermicularia*. The fungus belongs to a group which is known to cause the fruit rot of chillies, the leaf-spots of ginger and turmeric, and the leaf-rot of cabbage, knolkhol, etc.

Varieties affected.—Among the three varieties of cotton grown on the Coimbatore Central Farm, the fungus was found to confine itself to Uppam. The two other varieties grown are Cambodia and Karunganni and though they were grown side by side under apparently identical conditions they were free from the disease. This phenomenon in varietal resistance has been confirmed by subsequent observations made during the course of three years.

Conditions favouring the disease.—The weather conditions in 1923 were abnormal. There were heavy rains during the period from April to July. The disease was observed to be at its worst during wet periods, and observations made during subsequent years show the outbreak of the disease has synchronized with a heavy fall of rain. A humid atmosphere, therefore, appears to favour the growth and development of the fungus.

Effects of the disease.—The bolls are attacked in all stages. When young bolls are attacked they cease to develop, get hardened during the sunny days and fail to burst. The lint inside gets lumped up and turns yellow. When partially mature bolls are attacked they open, but the lint is rendered brittle and does not protrude outside. The black pustules of the fungus are developed on the outer surface of the kapas and even within the lint. In many cases seeds within the affected bolls are small in size and fail to mature. Though the fungus did not actually attack the seeds, the seed coat got disintegrated and the few seeds which germinated produced poor malformed seedlings.

Besides boll-rot the fungus also causes a seedling disease. If the weather conditions are favourable for its development during the seedling stage of the plant, the fungus attacks the cotyledons and the tender stem, causing their death.

The fungus is under study, and control measures to keep the fungus in check are being tried by spraying the plants immediately when the disease begins to appear.

The Press in India.

The important part played by India in Imperial politics, as well as the important part played by English-edited newspapers in this country, was emphasized by Mr. N. F. Cooke, who spoke to the members of the Rotary Club of Portsmouth and South-sea at their weekly luncheon on *A Newspaper Man in India*. Mr. Cooke stressed the fact that newspapers are widely read in India and said they should be widely read at Home by all who claimed to interest themselves in Imperial politics. English residents in India, and the Indians themselves, read English newspapers. The newspapers in India took an important part in public life and in the education of India's vast millions, drawing together the extremes, which were much further apart than the extremes in England. In addition to political differences, they had to contend with racial differences and religious feuds such as existed in England in the fifteenth and sixteenth centuries. Mr. Cooke proceeded to give details of the size and class of the Indian newspapers, with their cross-word puzzles and their football and cricket competitions. As an instance of the up-to-date traditions of these newspapers, he quoted the fact that 2 minutes after the Derby was run the winner was known in an Indian newspaper office. In conclusion, Mr. Cooke urged young men who were cramped in England to emigrate to where they could enjoy life at 113 in the shade "when in this dear old country of ours the heavens daily shed tears on our lost opportunities."

Jaggery in Jaffna.

The Ceylon Department of Agriculture has for some time been carrying on experiments with a view to testing the prospects of the production of jaggery in Ceylon. Plantations of sugarcane have been made at the Experiment Stations at Bibile, Allai, Anuradhapura and Jaffna. The growth of the canes at Bibile and at Jaffna has been satisfactory, and the provisional manufacture of jaggery from these canes has been begun. Mills and pans have been secured from India through the Government Factory, and have also been made by the Government Factory. The outturn of sugar has proved to be quite good. This sugar is being sold locally and there appears to be a demand for it. Steps are now being taken by the Government Agent of the Northern Province, in consultation with the Director of Agriculture, to test the prospects of the manufacture of jaggery from palmyra palms.

This will be of a preliminary nature this year, and the manufacture will be modelled upon the lines of the preparation of sugarcane jaggery at the abovenamed Experiment Stations.

Malaria in Bombay.

The report of the Executive Health Officer of the Bombay Municipality for the quarter ending 30th ultimo bears evidence of considerable deterioration in the general health of the population of the city. The number of deaths from all causes during the quarter was 9,447 as against 7,635 in the corresponding quarter of the last year and 10,129 the mean for the third quarter during the ten years 1916-1925. The number of deaths from small-pox was 72, being 29 more than the mean of the preceding decennium. To Cholera 3 deaths were attributed, and Enteric Fever was assigned as the cause of 44 deaths. The number of deaths from Plague was 9, being the lowest for the third quarter of any year since 1896. The number of deaths from Malarial Fever and Ague and Remittent Fever was 747 as against 536 in the preceding quarter, 328 the mean for the third quarter during the last cennium.

Encouragement of Cotton Research.

The Indian Central Cotton Committee have decided to award in January next six to eight Research Studentships of Rs. 150 per mensem tenable for two years from April, 1927. These will probably be allotted as follows:- Cotton Breeding; Cotton Physiology; Cotton Technology (Textile Physics); Cotton Entomology and Cotton Mycology. In addition, it may be decided to offer one or two scholarships for research on the increase of cotton production (especially on the black soil areas) by improved agricultural methods, etc. The qualification required is an honours degree of an Indian University, or the equivalent, in the special subject offered and special weight will be attached to post-graduate research experience. Forms of application and full particulars are obtainable from the Secretary, Indian Central Cotton Committee, 25, Wodehouse Road, Fort, Bombay, or from provincial Directors of Agriculture and Registrars of Indian Universities. Applications must reach the Director of Agriculture of a candidate's province or state before the 1st December, 1926. Forms of application will only be supplied to applicants who are *prima facie* qualified.

British Industries Fair, 1927.

The forthcoming British Industries Fair, which is being organized along the usual lines by the Department of Overseas Trade in London, at the White City, London, and in close conjunction with the Department of Overseas Trade by the Birmingham Chamber of Commerce at the Castle Bromwich Aerodrome, Birmingham, will be held simultaneously at both centres from the 21st February to 4th March, 1927. The Fair forms part of a scheme to exhibit the industrial products of the United Kingdom and the British Dominions. All Empire firms are eligible to exhibit their produce and manufactures. Admission to the Fair is free to trade buyers and the usual visa fees for passports to Great Britain will be remitted in the case of buyers travelling to the Fair. Invitation tickets can be obtained from His Majesty's Trade Commissioners in India at Calcutta or Bombay.

Topics in the Journals.

Water Power in the Pulp and Paper Industry.

We take the following from *Water Power Resources of Canada*, by the Dominion Water Power and Reclamation Service of the Department of the Interior Canada, January 1, 1926:-

A recent development that is doing much to enhance the importance of the Canadian pulp and paper industry is the growing movement of American mills towards Canada, due to the diminishment of their pulp wood limits, and the fact that their water powers have, with the growth of population, attained more value for central station purposes than for pulp and paper manufacturing.

The fortunate occurrence of tremendous supplies of pulp wood in close proximity to water powers, readily developable, of such size as to furnish the large quantities of power demanded by this industry, have placed Canada in the favourable position she occupies in this industry. Owing to large power demand, approximately 100 h.p. per ton of daily output of newsprint, and the prohibitive cost of transporting a bulky product such as pulp wood any great distance, this proximity of wood and power is absolutely essential to successful operation.

A recent development of interest affecting the power consumption of this industry is the rapid adoption of electric steam boilers as a means of transforming any surplus of available electric energy for pulp cooking, drying, heating, etc. Ordinarily, steam cannot be produced by electricity in direct competition with coal, but where surplus power can be contracted for at a specially low rate, or where large

consumers buying firm power, have, periodically, an available surplus in excess of actual power requirements, such surplus power can be advantageously used in raising steam. Similarly, mills maintaining their own hydro-electric equipment, are able to make full use of the water at their disposal by utilizing for raising steam any excess of supply over actual requirements.

There are 116 pulp and paper mills in Canada operating water power developments to furnish their own motive power. These mills have a combined installation of 181,971 horse-power

A number of these mills purchase additional power from central station organizations, while still other mills purchase all their power. Up-to-date figures of this purchased power are not at present available, but a conservative estimate places the amount at about 275,000 horse-power, so that the industry draws power from a hydraulic installation of about three-quarters of a million horse-power.

Soap-Making, An Old Industry.

Every civilized person has at some time or other, I hope, seen a tablet of soap; yet how many have even the roughest idea of the many processes it has gone through before it reaches the hands of the user? writes R. J. Sagar in *Science Siftings*.

Soap, by the way, is by no means a recent invention, for a complete soap factory, estimated at about 1,700 years old, was unearthed in the excavations at Pompeii; but it was only about 500 years ago or less that people of the country began to manufacture it and it was in those times one of the highest forms of luxury, taxed to such an extent that only the rich could afford to buy it.

It may be said that soap is a combination of fats and alkali, but this is not strictly the case; many things are taken out of this composition and many put in before a serviceable soap is produced. The fats most commonly used are tallow and cocoanut oil. These are melted first, and run into what is known as a boiling-pan, or kettle, which is merely a large steel vessel with a capacity of anything up to 100 tons, fitted with steam pipes for heating purposes, and a cock near the bottom for emptying. Next the alkali is added, which is usually in the form of a sodium hydroxide solution, and the whole contents mixed together and heated at the same time by means of fairly high pressure steam, and in due course saponification sets in. "Saponification" is the technical name for the chemical action of the alkali on the fats, which causes the mass to become pasty-looking, due to the formation of soap.

Further supplies of fats and alkali are added until the boiling-pan is about half full, and when saponification has ceased, leaving a slight excess of alkali, common salt is introduced, which causes the soap to be thrown out of solution and to float as a granular mass on the top. The solution underneath contains a small percentage of glycerine which, not many years ago, used to be run to waste.

However, during the War, glycerine was in great demand for use in the manufacture of explosives, and was, therefore, recovered by evaporation, and refined. Indeed, it may be said that whereas the glycerine used to be a by-product of soap, soap became a by-product of glycerine, so great was the demand for it. This glycerine liquor having been run off from the pan, the molten soap is treated with more alkali to ensure that no fats have escaped saponification as this would cause rancidity to develop.

Water is added and the whole boiled up for some time, and then allowed to settle overnight when it will be found that it has separated into three layers, soap at the top, a weak solution of alkali at the bottom, and a very poor soft soap called "Nigre," between the two. The bottom two layers are allowed to run off, and the soap transferred to tanks for storage if it is to be used for toilet soap, or into wooden frames, where it is allowed to cool and be cut into bars for household purposes. Shaving soaps are made in quite a different way. The fats (usually cocoanut oil and sasarine) are first melted in a pan with the alkali until saponification commences, and then the steam is turned off. The chemical action is so vigorous that enough heat is generated by it to complete combination of the fat and the alkali.

British Iron and Steel.

The address delivered by Sir William J. Larke, K.B.E., Director of the National Federation of Iron and Steel Manufacturers, before the Fellows of the Royal Colonial Institute at one of their celebrated and popular luncheon pow-wows held recently, causes us to ask the question which stands at the head of these notes, *viz.*, the British Iron and Steel Industry is it doing as well as it should be doing and could do, especially in the U.K., against the highly-paid wages in the United States, or the underpaid (so we are told) workers on the Continent? We do not feel that the answer is in the affirmative, any more than it would be were the same question to be put *re.* our rubber and cocoa manufacturing industries, considering we are easily first in the production of these two tropical crops.

In his paper, Sir William Larke told us that the British industry employs 260,000 men and has capital invested to the amount approximately of £200,000,000. It is responsible for 10 per cent of the value of the total trade of this country, although in 1925 the percentage fell to 9, it being a bad year, with 3,700,000 tons exported against approximately 5,000,000 tons in 1913. One feels, therefore, that twelve years later we should have added at least 50 per cent and exported 7,500,000 tons in a 1925. The consumption of the world, however, was at fault. "An estimate," it was pointed out, "had been prepared as to what the world consumption of pig-iron should have been during 1925 had the development followed the same rate as was experienced from 1800 to 1910, *i.e.*, an average of 60 per cent per decade. It was found that the total world consumption of pig-iron should for 1925 have amounted to approximately 130,000,000 tons, whereas the world productive capacity for that year was only 107,000,000 tons and world production is only 75,000,000. Under normal conditions the iron and steel industries of the world should have been experiencing a period of excessive activity, as demand would have been likely to have exceeded the supply. The question, therefore, arises, how can the potential demand be made effective?"

"The total exports to the Dominions of iron and steel in 1925 was 1,975,000 tons," we were further reminded, "with a domestic production in the Dominions of 1,800,000 tons," as compared with 2,400,000 tons in 1913, and a domestic output of 1,300,000 tons for that year, but the fact that the decline in exports was less to the British Dominions than to other markets is due, in part at least, to fiscal and sentimental preference, but also to the expansion of trade in certain directions, in which this country may claim to occupy the premier position *viz.*, tinplates and galvanized sheets, the trade in which with the Dominions has expanded with most of them, except India, since 1913; India showing a decrease in both products owing to the growth of her domestic industry. Incidentally, India has developed a substantial export trade in pig-iron, having exported in 1925, 401,794 tons."

The Basis of the Produced-in-Canada Policy.

The place of honour is given to an article by Col. Ralph H. Webb, Mayor of Winnipeg, in the September 1926 issue of the *Industrial Canada*. He is a strong believer in the "produced-in-Canada" idea. He has in his article set forth in vigorous and terse language, his attitude towards the subject. Governments and municipal officials, he says, should strive their best in making Canada self-sufficient by giving employment to Canadians in the letting of contracts and making purchases. His idea is not new, everywhere, every country wants to see that it is made self-sufficient first to its needs without resorting to foreign aid. In England, campaigns through the medium of press, advertisements and films, etc., it is proclaimed that "British goods are the best" and that "Britishers should buy British goods alone". Col. Webb's strong plea is a sign of the awakening self-assertive Canadians.

Canada's greatness cannot be measured, wrote Colonel Webb, only by her holding a premier position with regard to her large agricultural products. In defence of which position, some extracts from his article ought to be found interesting reading in this country, especially to those who are lukewarm about Indian-made goods.

"Let us look straight at the problem and if I don't follow the prescribed lines of expert writers it is because good common horse sense facts are more vital than a whole array of statistical figures."

"I really doubt whether that is what God would call great in a nation, for the simple reason that Nature provides the soil, the rain, the snow, the ice, the sunshine, the wind, etc., all the forces that produce growth, and all that man is called upon to do is to plow, sow, reap, garner and sell. What will make us great or greater, and what I believe, God would really call great lies in what we do with our brains and strength to go above and below the soil, to use the water and the air, in order to extract from them the riches deposited in them and to use them in such a way as to derive the highest results based on all that science can produce from everything. You may ask what has that to do with "Buy made-in-Canada goods"? Well, it is the first problem we have to solve, because we must produce before we can sell."

"It is the producer, the man who is called the labourer, whether on the farm, in the woods, the mines, the water, the air or the factory. It does not require much sense to know or realize who suffers most when trade is slack, when there are shut downs or when crops are poor. It is the *Worker*. So we must do our outmost to protect the worker, for if that is done, then capital is safe or protected. This creates confidence. More capital is called for. There is more expansion and this in turn means more work for the workers or again calls for more populations which means greater immigration and greater home markets for our agricultural industry".

"Our manufacturers must not forget that they too owe a duty to the Canadian producer in making purchasers of the materials, etc., they use in their own planes. And the merchants must realize that they are expected to push Canadian-made articles, although they must have the backing of the Government and the manufacturers in protection and a continuous nation wide advertising campaign and educational propaganda.

"Therefore if a continuous educational propaganda were put on, the old, the old time "tariff free trade" 'Manufacturer farmer' fallacy would be exploded and our farmers would realize as soon as any one that their best markets is the home market and they would be forced by their own intelligence to see that the problem will only be solved by helping to populate our best country, by backing up our industrial development and by buying "made-in-Canada" machinery and everything else they need."

Cultivation of Papaya.

In ancient times the papaya tree did not exist in India. It appears from the fact that the name "papaya" does not occur anywhere in Sanskrit language. Mr. M. L. Jayawant says in the *Indian Scientific Agriculturist* that the tree has been imported from America. The papaya tree prefers a moist warm climate and fruits all the year round. Propagation is done by seed. Experiments have been commenced to breed seedless varieties in Poona Agricultural College and it is believed that the attempts are successful by this time. Propagation by grafting has been attempted in America and Lucknow and it is hoped that plants thus propagated fruit earlier. The tree generally begins to yield at the end of the first year and continues up to the 4th or 5th year.

Water logging is harmful to the plant primarily because it rots the tender stem. The seeds are grown in pots in May and the young plant begins to appear in 6 weeks. One month later they are transplanted in pits previously dug 2 x 2 x 2 feet and treated with farm yard manure and litter. In some cases the litter and the dried cattle dung is burnt in these pits and they are filled with loose soil. When the monsoon sets in June or July then the seedlings are transplanted.

The following mixture has been found to be the best for fruiting and it also helps to develop the aroma :—

Superphosphate or Bone meal	..	100 lbs.
Sulphate of Potash	..	40 ,,
Nitrate of Soda ..	..	32 ,,
Black Sand	..	62 ,,

This may be applied at the rate of 1 lb. per tree once in the beginning of monsoon and once in October. Care must be taken however, to see that the plants are not irrigated after they are thus treated. The best way to put the mixture on is two days after showers of rain or irrigation, so that there would be just enough moisture for the fertilisers to act.

It has been found that the smaller the seed the more is the flavour and taste. Papaya is a useful fruit in many ways. The bark is used in the manufacture of ropes. The seeds are reported to have the property of curing worms and also to be useful in female disorders. They are also carminative. The raw fruit contains papain which has the property of digesting meat. The leaves are used for external applications to remove pain. Water containing juice of papaya leaves is used for bleaching and removing stains of ink and also washing coloured cloths. It brightens the colour and makes it fast.

The milk of raw fruits contains pepsin, which dissolves albumen but not meat. The pepsin proper acts in the presence of acid but papaya pepsin does not and that is why it is not such a strong digestive in the presence of gastric juice. In the presence of alkalies it is a powerful solvent and helps digestion. It is used for reeling silk or tusser cocoons.

The preparation of this product is easy. The juice should be obtained from fresh young fruits. Moisture and high temperature spoil its activity. The juice should be dried at a low temperature and then immediately mixed with double the quantity of rectified spirit. This mixture should be allowed to stand for several hours. The residue should be filtered off, dried in atmospheric temparature, powdered and kept in an air-tight bottle. Besides this, syrup, wines and elixir made from the fruit are sedative and tonic.

The strange and beautiful races of Antilles astonish the eyes of strangers and travellers who see them for the first time. If they are to be believed, the clear and clean complexion and exquisite flesh arise from the use of the papaya fruit as a cosmetic. A slice of the ripe fruit is rubbed over the skin and is said to dissolve spare flesh and remove every blemish. The most important property of the papaya fruits from a biochemical point of view is its power of converting other food into protein. This proteolytic power is possessed by the latex of the fruit.

The unique property of the milky juice of the unripe fruit has attracted the notice of Western Investigators since 1878. In 1921 experiments were carried out at Pusa. It was found that fruits having 3 or 4 incisions can be made to bleed on subsequent operations after an interval of a day or two but those having 7 or 8 incisions produce nothing when incised again. After rains the latex (juice) was thin and did not coagulate at once. Early morning is the best time to tap.

In preparing the crude papain, the following points should be carefully observed :—(1) Juice should be dried as soon as possible. (2) In drying, temperature should not rise above 40 degrees centigrade. Both these ends are obtained in some places by drying on hot plates. (3) The final drying should be done, if possible, in vacuo. (4) The product should be ground to powder and at once bottled up, using air-tight stoppers or packed in lead lined wooden boxes.

Patriotism: Its Psychology.

Dr. J. C. Maxwell Garnett read a paper before the members of the Psychology Section on "The Psychology of Patriotism".

The dictionary, said the Lecturer, defined patriotism as love of country: But what was country? It certainly included an organized community throughout which an accepted system of rights and obligations was maintained by a Central Government. The importance which mankind attached to his country lay there; that, without the protection of law, man's best work was not worth while and human life was cheap and purposeless. The first difficulty of effective life and work was to overcome the conflict in one's own soul by having all one's thoughts and feelings ordered in a single system, a single wide interest.

But conflict must be prevented between men and between groups of men, as well as each individual soul. A perfectly integrated personality was not enough. It is necessary also to integrate fellow-workers, neighbours, fellow-citizens, and finally, all mankind. That means, in the last analysis, that all men and women everywhere should possess a common supreme purpose to make a perfect world. "Then," he said, "freedom will prevail, because, What I want to do is what neighbours want me to do in the interests of us all. And justice will prevail in every one." Instead of thinking himself more highly than all, man would come to regard himself as only one of many equal members of the beloved community. Even the cat-hating dog was kind to the family cat.

Group sentiments and loyalties, as we now know them, however, tended to resist, instead of to promote, this result. They were too often differentiators, rather than integrators of the world-wide society of mankind. This they need not be. Every group to which a man belonged tended to become the object of a sentiment to his mind. That sentiment would be stronger. If the common experiences shared by the group were intense, if they were peculiar to the group, if they included a common purpose. Patriotism, the sentiment for the nation which was only the lowest common multiple of all the other groups at which a man belonged, was strengthened by all the other group sentiments and tended to be of paramount importance. It was made stronger still by common land-language, religion, government, economic interests, and most important of all, a common tradition, a memory of great personalities that seemed to embody in themselves the character and ideals of the nation.

But patriotism should not occupy the highest place on the hierarchy of loyalties; excessive patriotism prevented allegiance to truth and fair play and tended to override international justice. There was more individual freedom to be got from international co-operation than from a single cosmopolitan World-State. The growth of communications and inter-dependence of nations had changed the world almost out of recognition during the last century; the world had become a neighbourhood. A corresponding change in men's minds was needed, in their thoughts, and even their conduct would go wrong, would cease to correspond to the world of experience, and so tend to bring disaster and destruction. The first thing a patriotic statesman had nowadays to consider about any measure he proposed was its effect on the world as a whole. If it was harmful, the public opinion of the world might say so through the

Assembly of the League of Nations. Whatever advantages it might seem to have had, would then be outweighed. To serve first the interests of the whole world-wide society of mankind had come to be the first maxim of practical statesmanship.

Reform in Japanese Banking.

Capital and Trade reports the appointment of a preliminary committee of investigation, to examine Japan's banking system and to recommend legislation to improve the financial organization of the country, the necessary orders having been issued by the Japanese Department of Finance on April 16, 1925. This preliminary committee, consisting of high officials of the Government, representatives of the principal official and semi-official banks, and prominent economists, was placed under the chairmanship of the Vice-Minister of Finance. There is felt the need of reducing the rate of interest and of stabilizing the circulation of money by correcting the defects of the present banking system. It is estimated that interest payments in Japan amount to at least 2,000,000,000 yen a year, and that these payments can be reduced 20 per cent through banking reform, 400,000 000 yen more will be released annually for the producing interests of the country.

POPULARITY OF TRUST COMPANIES.

The banking system of Japan is, nevertheless, a powerful and efficient instrument of that country. Since 1782—from which year modern Japanese Banking dates its origin—it has grown with remarkable rapidity and to-day there are a number of institutions with enormous resources and with ramified organizations throughout the world. The Yasuda Bank, the Mitsubishi Interests, and the Yokohama Specie Bank are of this type. The national banks regulations act of 1872, which forms the basis of the Japanese banking system, was modelled after the American national banking act. It has remained, with few modifications the basis for the bulk of the banking business of the country, although a variety of other types of institutions has since been created. It is not surprising, therefore, that the principal complaint by Japanese bank reformers is against the lack of co-ordination between the central institutions and the individual banks.

The history of Japanese banking reveals how the banking resources of the country have been scattered. The Bank of Japan established in 1882, was originally constituted as the central bank of the country, with the power of rediscount; but later, after the acquisition of Korea and Formosa, the Bank of Chosen and the Bank of Taiwan became the central institutions for those provinces. The principal modifications of the national banks regulations act were made in 1883, when the privilege of issuing notes was taken from the national banks and granted to the newly created Bank of Japan. Meanwhile, private banks and companies resembling banks increased in number until in 1884 there were 954, and there was still no supervision over them beyond the regulations issued by local authorities. To bring them under more efficient control the ordinary banks regulations and the savings banks regulations were promulgated in 1890 and put into force three years later.

In 1921 a savings bank law was passed superseding the previous regulations over this class of institution. The principal provisions of the act, beyond those describing the authorized functions of such banks, were to limit their organization to licensed stock corporations with a minimum capitalization of 500,000 yen, to restrict holding of any one security to one-fifth the capitalization of the issuing company, to limit loans to any individual to a maximum of one-tenth of the capital and reserve of the bank, and to limit the total amounts of loans against real estate mortgages, to the amount of the paid-up capital and reserve of the bank.

In addition to the savings banks and the ordinary banks organized under the general banking laws of the country, several individual institutions have been created by special acts of the Diet. These include, in addition to the three banks of issue: (1) The Yokoham Specie Bank, organized in 1880 chiefly to finance the foreign trade of the country; (2) the Hypothec Bank of Japan, organized in 1897 to provide long-term funds against real estate; (3) the Industrial Bank of Japan created to finance industry and trade both for short and long terms, (4) the agricultural and industrial banks, created as local financial organs to furnish long-term loans at low rates against real estate, and (5) the Hokkaido Colonial Bank, established to supply capital for enterprises in connection with the colonization and exploitation of Hokkaido and Korafuto (Southern Saghalin).

There are also several classes of financial institutions created by various laws: (1) Mutual loan societies operating among the middle and lower classes, which received their status by the mutual-loan society law of 1915; (2) approximately 200 city credit associations or people's banks, operating under laws of 1900 and 1917; (3) a central chest for industrials associations, and (4) numerous trust companies. The last-named type, which first appeared in Japan in 1906, has grown so rapidly in number and resources, especially since the war, that it has aroused the jealousy and opposition of the regular banking interests. At present there are 33 trust companies with deposits aggregating, 408,415,000 yen at the end of March against 327,604,611 four months earlier. Mr. Yoneyama, president of the Trust Society of Japan, recently predicted that deposits before long would soar above the billion yen mark. The popularity of trust companies has been due to the freedom under which they operate their status not being clearly defined in Japanese law—and to the higher interest rates which they pay on deposits.

One change which seems likely to be recommended is a revision of the regulations governing note issue. The circulation is admittedly inelastic, whereas money demands are seasonal, moving up and down in distinct waves and reaching the maximum when the heavy silk movement begins in the late summer and fall. The fiduciary issue of the country is restricted within narrow limits, the Bank of Japan being privileged to issue bank notes against commercial bills to the extent, of only 120,000,000 yen: the Bank of Chosen for 50,000,000 yen, and the Bank of Taiwan for 20,000,000 yen. These limits may be exceeded upon payment of a percentage tax. The minimum is 5 per cent; since April 1925, the tax has been 6 per cent. For the note issue for the Bank of Japan at present amounting to 1,177,000,000 yen, a margin of

120,000,000 yen fiduciary issue is deemed small. It is now advocated that the country's circulation be concentrated in one bank, and that its issue be made more elastic in order to meet the fluctuating demand for money which characterizes Japanese trade.

BANK OF JAPAN'S CONTROL OVER MARKET SMALL.

There has been a growing feeling among Japanese bankers for some years that the company's banking organization is too loosely knit; that the widespread activities should be more closely co-ordinated and that, particularly, the nation's bank reserves should be centralized in the Bank of Japan. Current deposits of Japanese banks with the Bank of Japan, for example, average around 70,000,000 or 80,000,000 yen, or about 1½ per cent of the total bank deposits of members of the 18 clearing houses—which now average around 5,500,000,000 yen—in contrast to the 7, 10 and 13 per cent ratio demanded of member banks of the Federal Reserve System. Japanese banks let out at call a greater portion of their loanable funds, consequently, as the market is inelastic and as there is no great volume of rediscounts, a sudden demand for funds causes violent fluctuations in money rates.

The Bank of Japan never played the part in rediscount operations that might have been expected—largely it is said, because of its casual manipulation of the discount rate. The official rediscount rate of the Bank of Japan has stood at 2 sen per diem (7.3 per cent) since April 15, 1925; and the last previous change was in November, 1919. Meanwhile, the market rate for call money averaged during the past year 5.84 per cent, with rates on commercial paper ranging from 6.21 to 9.15 per cent; but during the five years from 1919 to 1925 the market established a much wider range, call money going as low at 1.83 per cent and as high as 12.05 per cent. As a result, there is no real market for commercial paper in Tokyo or Osaka, and the market for call funds usually sags in the middle of the month and rises toward the end.

Although the Bank of Japan exercises only a minor influence upon the market, the extent of the control which the Government itself exercises is considerable. In certain cases the Government practically dictates the rate of dividends which may be declared, and it has exerted pressure to encourage, if not compel, numerous bank mergers.

Books in Brief.

Short Reviews of Recent Books.

Memorandum on Production and Trade.

Issued by the League of Nations, Geneva, 1926.

The League of Nations has just issued the third of the series of documents called for by the Preparatory Committee for the proposed international Economic Conference. This is a brief memorandum on production and trade in which a very large amount of information is summarized in a convenient form. Its object is to answer the three following questions:

1. What changes have taken place in the population of the world since 1913 and in the territorial distribution of that population?
2. What changes have taken place in the production of basic raw materials and foodstuffs in the world as a whole and in the main divisions into which the world naturally falls?
3. What changes have taken place in the quantum of world trade and in the distribution?

For the purposes of analysis and comparison, the world is divided into seven continental groups, and Europe into Eastern and Central Europe, both including and excluding Russia, Western and Maritime Europe, and Europe both including Russia. Figures for the whole of Europe are also given.

The main conclusions reached are summarized as follows:—

(*a*) The population and trade of the world in 1925 were both about 5 per cent greater than in 1913.

(*b*) The production of foodstuffs (exclusive of China) and raw materials has increased more rapidly than the population of the world and is now probably 16 to 18 per cent in excess of what it was in 1913.

(*c*) The population of Europe has only increased by a little more than 1 per cent; her production of raw materials and foodstuffs, thanks largely to a favourable harvest, was in 1925 four to five per cent above the pre-war level and her trade probably some 10 per cent below that level.

(*d*) In 1924, the production of raw materials and foodstuffs in Eastern and Central Europe, including Russia, still fell short of the pre-war by nearly one-fifth, while the trade of these countries did not reach 66 per cent of what it had been, despite the increase in the number of trading countries. During 1925, however, Central Europe made more rapid progress than did the rest of the continent, her trade is now about three-quarters of what it was and her production index just over par.

(*e*) The population of the western and maritime nations of Europe is now about 5 per cent greater than in 1913. The production index of this group of countries inclusive of cereals and foodstuffs was in 1925 about 7 per cent greater than before the war and exclusive of cereals and foodstuffs scarcely up to the population figure, while trade just failed to reach the pre-war level.

(*f*) The population of North America is almost one-fifth, that of South America perhaps slightly over one-fifth, and that of Oceania (Australia, New Zealand, etc.) over one-sixth, greater than in 1913. The growth of population in other parts of the world has been much less rapid.

(*g*) On the other hand, the trade of Asia has increased almost, though not quite, as fast as that of North America. In both those continents it was over one-third, and in Oceania just under one third, greater than in 1913, while in Africa and South America it has shown no increase.

(*h*) The production of raw materials and foodstuffs in North America, Asia and Oceania is now about one-quarter above the pre-war amount; in South America and Africa (gold excluded) it is over

one-third greater, and in Central America the increase has been still higher.

The volume, which is priced 1/6*d.*, is obtainable from the League's Agents in different countries or direct from the Sales Department of the Secretariat at Geneva.

Memorandum on Balance of Payments and Foreign Trade Balances, 1911—1925.

Issued by the League of Nations, Geneva, 1926.

The present volume, which has been prepared by the Economic Intelligence Section of the League of Nations, is issued in continuation of the volumes published in 1924 and 1925 under the same title. It is, however, of special interest as it is one of the most important documents prepared in view of the forthcoming International Economic Conference. It will shortly be followed by other publications, notably on Production.

The first part of this volume consists of an introduction and a series of estimates of the balance of payments for twenty-two countries prepared in the great majority of cases, officially by the Governments concerned. Statements are available for the first time concerning France, Germany, the Irish Free State, Japan, Latvia and Siam.

The second part (see especially p. 135 and following pages) consists of a complete survey of world trade during the years 1924 and 1925, in which the recent figures shewing the volume, direction and distribution are compared with those for 1913 and from which it appears that while the trade of the world to-day is greater than it was before the war, Europe has not yet recovered her previous trade prosperity; and it tends to shew that there is an important shift of the centre of gravity from the Atlantic to the Pacific.

This book is the first of two volumes. The second, which will be published this year, will consist of a summary of the trade statistics of 63 different countries (six having been added since last year) together with explanatory notes.

These two volumes together will constitute the most complete review of the subject available at the present time. It will enable not only specialists in economics, but persons generally interested in world affairs to form a picture of the position and recent development of world trade.

The analysis shows that the trade of the world in 1925 exceeded that in 1913 by probably about 5% and that European trade was still somewhat over 10% below the pre-war level. North America, Asia and Oceania have gained the most and the centre of gravity is clearly shifting from the Atlantic to the Pacific Ocean.

The share of the United Kingdom in the world trade has on balance sunk slightly, exports having fallen off and imports increased relatively to those of the rest of the world. The British position was rather less favourable in 1925 than in 1924 although it would appear that she has regained some lost ground in certain American countries.

The recent troubles in China would appear to have affected other countries to a much greater extent than Japan from which country China obtained 31% of her imports in 1925 as compared with about 23% in 1924 and 20% in 1913.

The memorandum closes with the following summary of the broad tendencies which are affecting the distribution of trade to-day:—

"The United States and India now buy less from Europe and more from Asia; China and Japan buy less from Europe and more from North America; Australia less from Europe and more from North America and Japan. Reciprocally, India sends a greater proportion of her goods to North America and Asia, China to North America; Japanese exports to Europe have dropped from 23·3 per cent to only 6·6 per cent of her total exports, while those destined for North America have risen from 30 to 44·5 per cent. Australian imports from Europe have dropped from 71 to 54 per cent of her total imports, those of the Argentine from 80 to 64 per cent.

Trade is passing from the Atlantic to the Pacific."

Industrial Conditions and Labour Legislation in Japan.

By Iwas F. Ayusawa. Published by the International Labour Office, League of Nations, Geneva. Price 2*sh.*

This small volume of 119 pages contains a brief and interesting account of the present industrial conditions and labour legislation in Japan. It is purported to be only an informative study based on available material rather than a regular interim report. The introductions deal with Japan's teeming population and the inadequacy of agricultural area to feed the millions. To relieve undue congestion, emigration cannot be held as the only possible solution as the past has proved in Japan. Adding to this emigration now-a-days is not such a free affair as in good old days. Facing such an inevitable problem of over-population, there would seem of late to have grown something like a national determination to increase the industrial capacity of Japan in spite of many shortcomings. It is also felt by many that this can be realized so long as the people are industrious and enterprizing and the industry is organized on maxims of justice and sanity.

The book in general deals with the industrial growth and conditions of Japan; the boon during the war and its after-math; general trade dilapidation, the State coming to the aid and betterment of the workers by enforcing many legislative acts with regard to minimum age of industrial workers, regulation of labour and relief miners; Government organization of the bureau of employment exchanges; prohibition dangerous and unhygienic work to women and children; compensation for injury, sickness and death; rules of employment and labour in mines; protection of sick persons and of women after child birth, etc. In the opinion of the author labour legislation in Japan in most cases was the direct result of the Washington Conference.

In October 1922, a body called the Social Affairs Bureau was created to deal with labour problems, including questions concerning the international labour organization. It is said that this Bureau is progressive in dealing with labour problems as most of the bills drafted by the bureau attest to, and that it has not a little contributed to the recent marked development of labour legislation in Japan.

Chapter III of this book deals about hours of work. The general opinion prevailing is that the hours of work in Japanese industry are excessive. There is no fixed law of State about the regulation of hours. Although it can be safely rated at 9 hours per day except in the case of women and young persons.

Acuteness of unemployment is everywhere glaringly seen and Japan is not altogether free from it though

it is not so virulent as in some of the European States.

One of the most significant happenings in Japan is the growth of Trade Unionism on the western model and it was phenomenally accelerated since the Great War. According to some labour leaders, the actual strength of the organized workers is about 300,000.

Other chapters worthy of perusal are, Chapter IV: wages and cost of living, cost of living inquiries, relation between prices and wages, and Chapter V, women and child labour, maternity protection.

In conclusion, the author says that the hopes entertained in respect of improved legislation and better working conditions in Japan will be soon realized.

Economic Life in a Malabar Village.

By S. Subbarama Aiyar, M.A., Dip. Econ., *Senior Lecturer in Economics, Madras Christian College, Madras.* The Bangalore Printing & Publishing Co., Ltd., Mysore Road, Bangalore City. Price Re. 1.

The study of typical villages in different parts of India is now conceded to be an aid to the proper understanding of the Economic life of the people inhabiting this vast continent. Mr. Subbarama Aiyar's book, which has been issued as the second in the Economic Series of the University of Madras, fully sustains the reputation he has secured to himself as an Economic student. Taking the cue for the work from Dr. Gilbert Slater, formerly Professor of Indian Economics, University of Madras, and following Dr. Harold Mann's method, he has produced a volume of about 200 pages describing the essential features of economic life in rural Malabar. Dr. Slater in a Foreword sets forth the occasion for the book, giving at the same time an account of Malabar in its socio-economic aspect. The author, himself a native of Malabar, has spared no pains to make the book instructive. The chapters are all well-written with the help of materials gathered first-hand. Those on "Land Tenures" and "Wealth and Welfare"—to name but a few—will repay perusal. The author's suggestions, towards the close of the book, for the rejuvenation of Malabar, deserve consideration. As a model book on rural economic investigation, this should prove immensely useful to the student of Indian Economics. The index is a full and useful one.

Currency and Central Banking.

Issued by the League of Nations, Geneva, 1926.

The Memorandum on Currency and Central Banks, 1913-1925, issued by the League of Nations, Geneva, constitutes the first instalment of the documentation concerning the economic condition of the world which has been called for by the Preparatory Committee, of the International Economic Conference which it is proposed the League of Nations should summon at a later date. Further Memoranda will be made public before the Preparatory Committee holds its second session in the autumn. The subjects dealt with in these Memoranda will include the volume and direction of the international trade of the world, the balances of international accounts, the growth of population and the production of essential commodities, and public finance. The present Memorandum on Currency and Central Banks has been issued in two parts: The first consisting of a historical introduction and the second consisting of statistics of discount rates, note circulation, gold and foreign assets reserves, commercial deposits, price indices, etc., and summarised statements of the balance sheets of all the Central Banks of the world up to the end of 1925. India figures in Vol. II, Table 27, pp. 186-187.

Economic Development.

By G. K. W. Perera, B.A. (Cantab), Barrister-at-Law. Printed by *The Ceylon Daily News*, Colombo.

This is an appeal for the economic uplift of Ceylon preparatory to its political emancipation. The first one or two chapters are devoted to a brief survey of the subject in outline, and a diagnosis of the causes which have contributed to the present position. The author strikes the key-note to the whole problem when he says "our goal then shall be money or *wealth*", for, he opines, that wealth is all power and with power, in its wake, comes in eventually freedom from Political Serfdom. He would, therefore, urge that any scheme of economic reform in Ceylon should run on the three fold path of accumulation of **Capital**, diffusion of **Knowledge** (*Education*) based on a sound system of national education, and united effort or **Co-operation** on the part of all its citizens. The establishment of a Ceylonese Bank must, according to Mr. Perera, be the first step towards the achievement of the first object, while the institution of our Estate Products Company as a setback against all foreign exploitation of raw material in Ceylon would go a long way in the same direction. The problem of unemployment, lack of commercial and industrial progress with their attendant evils might well be solved to a great extent, in the opinion of the author, by a sound system of Technical and Vocational Training consistent with the needs of the country. With Plato, Mr. Perera would echo 'Take care of Education and education will take care of all other things'. He adds 'the cure for all our failings is education on national lines, and the cure for all our shortcomings is again education on economic and utilitarian principles.' The chapters devoted to the subject of 'Co-operation,' 'Agricultural Industries', and 'Non-planting Industries' are suggestive to a degree, and show the author's grasp of the questions he discusses and the practical character of some of his solutions. The section on 'Colonization' traces succinctly the colonial policy of Britain with special reference to Ceylon, and is a plea for a more sympathetic and liberal outlook on the part of Great Britain in her future colonial policy. The section on 'Horse Racing and Lotteries' sets forth the evils attending that 'Royal Sport' and urges upon the public of Ceylon as well as the Government to discourage it. The concluding pages on the proposed 'Ceylon Development Association' describe in outline its objects and *modus operandi*. Mr. Perera's book is on the whole practical in its outlook. We gladly commend it to all interested in the well-being of Ceylon.

The Co-operative Reader.

By Rao Sahib M. V. Appu Rao. Ashi Press, Berhampore.

If it was the intention of the author of this little book to present the advantageous principles of rural co-operation in an intelligible manner in non-technical language, we should think after a careful perusal of it that he has succeeded in doing so. He has written it with a quaintness that is reminiscent of charming folklore. His experience in the Agency Tracts as an Assistant Registrar of Co-operative Societies makes him write with authority on the subject. He has understood that the hillman's illiteracy stands in his way to grasp the essentials on which the fabric of co-operation is built. The co-operative society should

replace the sowcar, which would market Agency produce, import unavailable commodities and best of all finance the Agency people. The advantages that accrue to a hillman from his membership of a co-operative society are many: (1) He gets better value for his produce. (2) He gets imported articles cheaper than in the bazaar. (3) He gets loans and advances at low rates of interest. As a whole the object of the book is to make available the blessings of co-operation to the unsophisticated hill cultivator or artisan whose ignorance and illiteracy is being exploited by rapacious money-lenders.

The book is well illustrated and is introduced to the public by an appreciative preface by L. H. Arndt, I.C.S., District and Sessions Judge, Vizagapatam. A translation of the book into the local vernaculars would make it a more effective propaganda pamphlet.

South Indian Gilds.

By Mr. K. R. R. Sastry, M.A., F.R.ECON.S. Published by The Indian Publishing House, Ltd., Madras. Price Re. 1 or 2*sh.*

The little monograph, dedicated by kind permission to the late Dr. Marshall of Cambridge, is the result of investigations conducted by Mr. Sastry. It treats of gild organization as it exists among the craftsmen of some of the southern districts of the Madras Presidency including Trichy, Tanjore, South Arcot, Madura, etc. Incidentally it corrects the misapprehension prevalent in certain quarters that "gild organization is unknown to South India except in Madura". The author's description of the organization of Town and Rural Gilds is interesting. In the concluding chapter headed "Lines of Resuscitation" he offers a few suggestions for the resuscitation of the old-world gilds. The booklet ought to inspire other workers in the field.

Temples, Churches and Mosques.

By Yakub Hasan. Published by Messrs G. A. Natesan & Co., Madras. Price Rs. 1-8.

In this little book of over 200 pages, Mr. Yakub Hasan has attempted to give a brief survey of the world's architecture. He has brought to bear upon this work his personal knowledge of arts and architecture, and his comparative study of religions enables him to give a dispassionate view of the various schools of architecture in India and elsewhere. The reader, as he turns over the leaves of the book, feels like one striding the world with the pace of a Colossus. He is taken through the Chaldean, the Greek and Roman Temples; the Buddhist and Hindu monuments of the Far East in all their variety and magnificence next followed; then he gets glimpses of Solomon's temple, the Kaabu at Mecca and the great Cathedrals of Mediæval Europe. The Mosque architecture of Egypt and the Byzantine and Sarcenic styles of architecture next claim attention. Finally, the glowing splendour of Moghul art of Hindustan gives a finishing touch to the review. The concluding chapter on the Message of Universal Peace is an appeal, in the name of art, culture, and civilization, for inter-communal amity. The book is interspersed with apt quotations from R. E. Hume's *World Religions*, Fergusson's *History of Ancient and Mediæval Architectures*, etc., and is fully illustrated with good pictures of famous Temples, Churches and Mosques.

The Brinjal, Its Culture and Culinary Uses.

By Mrs. Ida Thompson. Published by Messrs. V. Naid & Co., Bangalore.

This is the first of a proposed series of little book on the Indian vegetables. Judging from the nature of the present publication, the coming series ought to prove helpful and practical. This useful little domestic book is dedicated by kind permission to Her Excellency Viscountess Goschen. While it briefly treats of the proper rearing of the brinjal and the correct way of tackling the pest that attend its cultivation, it is more largely devoted to providing a number of excellent recipes to suit both Indians and Europeans. Mrs. Thompson rightly pleads for the rearing of a vegetable garden in conjunction with a flower garden. Her plea seems a sound one. If a flower garden is an asset on the æsthetic side, the vegetable garden should be, in a small way, a feature of domestic economy. Mr. R. D. Anstead, Director of Agriculture, Madras, and Dr. G. Fowler, Professor of Bio-Chemistry in the Indian Institute of Science, Bangalore, have spoken well of this book and recommend it to lovers of the vegetable garden. From an extract published in the book from a letter of Mr. G. H. Krumbeigel, we glean that the book leaves nothing to be desired. Mrs. Ida Thompson should be congratulated on the pains she has taken in bringing out so practical a book as this one.

Acknowledgments.

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2. *Report of the Imperial Economic Committee on Marketing and Preparing for Market of Foodstuffs, produced within the Empire, 4th Report—Dairy Produce*, issued by His Majesty's Stationery Office, London.

3. *Report of the Third Session of the Indian Industrial and Commercial Congress, February, 1926*, published by the Honorary Secretary, Canada Building, 3, Home Street, Fort, Bombay.

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The Industrial Canada, September, 1926.—The Sugar Manufacturing Industry Reviewed. By H. Michell and Woolfson.

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The Bengal Co-operative Journal.—Scheme for Co-operative Sale of Jute. By Mr. Ewing.

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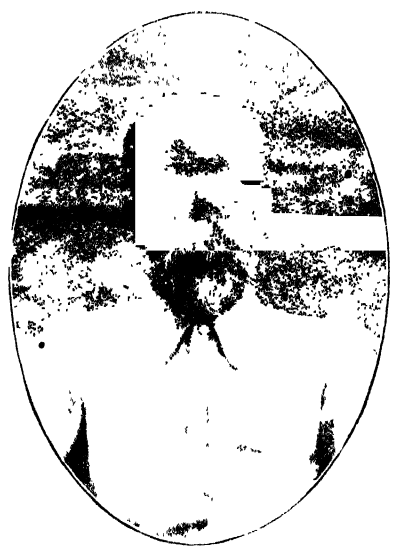
A Monthly Periodical devoted to the Discussion
of all Economic Topics of Interest

NOVEMBER 1926 SUPPLEMENT

Universities : What They Are and What They Should Be.

By Sir P. C. Ray, Kt.*

Ten years ago when I had the good fortune of being present on the historic occasion of the inaugural ceremony of your University, I rejoiced to find that a very momentous step had been taken by one of the most distinguished and farseeing rulers of India. Since then, I have always been closely watching the progress of your University, little thinking that I should, one day, be called upon to deliver its Convocation Address. Allow me, therefore, to offer my sincere thanks for the honour you have done me and to assure you how greatly I value it.



SIR P. C. RAY, KT.

At the very outset I must confess that I feel not a little nervous to address you in the presence of a Vice-Chancellor whose encyclopædic knowledge and attainments and whose extraordinary power of synthesis are, at once, the wonder and despair of literary men in India. It is, therefore, on your patience and kindness that I must rely to be able to discharge my task successfully.

Mysore is one of the most progressive and enlightened Feudatory States in India and the experiment which you have started here, is being watched with intense interest all over the country, by persons connected with Universities not only in sister states but also in British India proper. I shall avail myself of this opportunity to give expression to my thoughts on certain aspects of the educational problem which these long years of the closest association with young men and educational institutions, both at home and abroad, have forced upon me. The clearness with which the vision of an ideal University stands before me to-day is, undoubtedly, the result of the great process of elimination working, consciously or unconsciously, for more than thirty years of my educational experience; and let me not be misunderstood, if I begin by saying that the problem of education, here or elsewhere, has, in the main, not been handled with that intelligence and sagacity which it deserves. To be frank, we, in India, have, since the British occupation of our country, always regarded *our* educational problems from a point of view which is *purely* British. Though it may not be true at the present moment, there is, I am sure, no one here who can deny the fact that until very recently we, Indians, conveniently relegated the task of evolving *our* educational institutions to our rulers,

* Part of Convocation Address delivered before the University of Mysore, on the 27th Nov. 1926.

who, as it was natural for them, transplanted *their home* institutions to *our* soil.

The outstanding difference between the ancient or mediæval University and the modern is the merely cultural aspect of the former and the cultural and vocational traits of the latter. In ancient and mediæval times, the differences between University and school education were instinctively regulated both as regards extent and object. This was possible as many of the learned professions had not then been clearly outlined nor had so many come into existence. The system offered a more or less satisfactory solution of the ordinary educational requirements of the people of the time, the higher learning being mainly sought by those who had "scholarly instincts". With the coming into existence of many learned professions later on, social and economic necessity led many more to seek training in these higher institutions (or Universities) but when the inrush became disproportionate to the demand, and some of the Universities, through want of proper perception, allowed their halls to be used as 'marts' and not 'mines', the unsuitable character of the modern system became apparent

We thus notice the more thoughtful Universities changing their character from an 'examining body to a 'teaching one. I confess that a certain amount of 'examining' trait must exist in all Universities as the business of life requires that we must judge. But to lay more stress on this than on the creative side of human intellectual efforts would reduce them to the condition of commercial coaching establishments. There must be separate institutions for such particular *feats* as training for the competitive Civil Services, but here in the University our motto should be 'Advancement of Learning'.

I shall now try to prove that unless such distinctions are introduced into our educational system, the functions of our Universities would be too unwieldy and that a clear demarcation between the school and University efforts is, under a healthy condition, inevitable. As I have said on many occasions we cannot in life escape an assortment, be it biological or intellectual. Whilst biological selection often ruthlessly puts aside the infirm and the weak, in the intellectual world, goaded by social instincts and the idea of social or state responsibility, an effort is made to equip a man on the score of his intellect. To sharpen the intellect or illuminate the mind up to a certain extent is not difficult with most men, but intellect that can create is a rarity, and the development of such an intellect if undertaken in an organization must needs be different from the less gifted ones. Whilst general education is a necessity—so beautifully represented in the Soviet Educational Poster by a blinded man about to fall down a precipice,—and to-day a birthright with most, the higher cultural centres are useless for their immediate purpose. The demarcation is thus clearly based upon intellectual capacity.

I have already indicated that most Universities exist for two purposes: for the training of men and women for certain professions, and secondly, for the sake of pure learning. It is obvious how the functions of the two, though different both physically and morally, are quite interdependent. True, the practice of existing knowledge may do for a number of years, sometimes for a generation perhaps, but soon its effects weaken and new knowledge is realized to be a necessity in the life of mankind for its very progress. Thus the merely practical education in the Universities would have to be fillipped and given a direction by original research Between the unalloyed investigator and the practical utilitarian there are necessarily many gradations which fill up university activities, and I would rather that each understood his vocation, so that pure learning could flourish and for ever continue to replenish the bowl of human understanding. If this is our ideal, our methods of achieving the same must be shaped accordingly.

If we begin by critically examining our methods in India (not only in your University) the first outrage that we find we committed was in making a foreign language our vehicle of instruction. It is surprising that this principal reason for our intellectual sterility was not discovered till very recently, and it is still more surprising to find that some of the well-known educationists of the time continue to regard this relegation of the English language to an inferior position as fraught with disastrous consequences! To avoid misconception, I must here, once for all, make it clear that the study of English or other important foreign languages is by no means

discouraged; they open up newer vistas of thoughts and ideals; there is no need of entertaining the fear that the language in which Shakespeare and Milton wrote will be left uncultivated. Only it must not be looked upon as the medium of instruction A man of education must, in the first place, be one well up in all-round information, and he can gather it best and in the minimum of time if he does so in a language he learned to lisp in, while sucking his mother's breast—the language of his nursery. Arithmetic, History, Economics, Politics, Logic and Geography, in short the book of knowledge, can readily be mastered in one's own vernacular. That should be the first stone in our educational edifice if we want to build well and high!

Every one will admit that with an improved and broadened form of secondary education, the functions of the Universities will be stripped of many of their unnecessary appendages, making thus for real progress The mechanical portion of training which ought really to be finished in the school stage, but which unfortunately is carried on to the University forms, will then greatly disappear and make these Universities real centres of learning and culture. I fear a good deal of explanation is necessary at this point, mainly because the present University system is as yet so full of routine details that its function is not very far removed from that of a Secondary School. Even in the post-graduate stage there are some who would insist on definite exercises! I do not for a moment suggest that in the Universities under the cloak of freedom of choice of study any indolence should flourish. The habit of industry in addition to intellectual capacity should form the primary condition of continuance in the University. All that is implied is that the numerous compulsory class lectures and exercises that form to-day the basis of education in the Universities should be abolished if the intellectual capacity of University students is to develop. No doubt the lecture system gives an appearance of work, but if the student is himself willing to utilize his time, he would in most cases find that he gets through more work by absenting himself from these compulsory lectures.* The greatest disadvantage of the compulsory lecture system arises from the facts that those that attend can only under exceptional cases ask questions to clear their difficulty, and as is only natural, the teacher only explains his own view-point. To remedy these evils, the tutorial system is being introduced in some Universities; but although this latter partially supplements the incompleteness of the former method, its general effect, so far as I am aware, is more of the nature of coaching without intellectual effort. Just consider the opposite system where the student is only given the names of some books and some questions on the problems dealt therein; he reads them, digests them and develops his own answers to the questions by a process of thinking which is his own, and then in the College Seminary discusses them from his own point of view with his colleagues and professors, preferably in limited groups. I am sure under these circumstances his powers of analysis as well as synthesis will be better developed, and his efforts, though irksome in the beginning, will soon enable him to carve out his own intellectual empire. All these, however, presuppose a sound secondary education.

The question may be asked, if the lecture system be abolished, what should be the function of professors? The answer is obvious—the function of the professor should be mainly original research. Where he feels he has something new to impart, he lectures, he discourses and thus keeps the spirit of enquiry for ever alive and growing in this intellectual democracy. In the words of Bertrand Russell, skill in pedagogy in University teaching is no longer important

I may be now allowed to review in short the workings of my own University, I mean that of Calcutta, from the point of view of the ideals laid down above. While regretting that our secondary system is most

* Adopting as his text the dictum of Carlyle that the modern University is a University of books, Mr. H. G Wells says:

"Now the frank recognition of the book and not the lecture as the substantial basis of instruction opens up a large and interesting range of possibilities. It releases the process of learning from its old servitude to place and to time. It is no longer necessary for the student to go to a particular room, at a particular hour to hear the golden words drop from the lips of a particular teacher. The young man who reads at 11 o'clock in the morning in luxurious rooms in Trinity College, Cambridge, will have no very marked advantage over another young man, employed during the day, who reads at 11 o'clock at night in a bed-sitting-room in Glasgow."

deplorably deficient, for which the medium of education is not inconsiderably responsible, the post-graduate system developed by that illustrious educationist, the late Sir Ashutosh Mukherjee, approaches my conception of University ideal. Its highest ideals are conterminous with absolute intellectual freedom, the full realization of which is unhappily being hampered by financial inadequacy. I shall not be guilty of high treason against my Alma Mater if I choose to infer that to meet this inadequacy, we have been forced, to a certain extent at any rate, to keep both the secondary and degree courses of instruction tied to our apron strings. The effect of such a system is that healthy elimination for which I stand, is secured only partially, and necessarily the beneficent effect of the post graduate system is reduced. In those sections of the post-graduate department, for instance the science sections, where limited accommodation practically ensures rigorous elimination, where the munificence of far-seeing donors have placed teaching and research on a comparatively sounder basis, the record of work and the output of original contribution are by no means unworthy. The workers in the College of Science, students and teachers alike, come into that intimate contact with one another which is truly characteristic of an intellectual democracy. On the other hand, in the Arts section where by the very nature of circumstances already alluded to, the elimination is far less, though the teachers themselves are a distinguished brotherhood, each contributing to the stock of human knowledge worthy of their position, the mass of students lose that most important of all opportunities,—the contact with the inner workings of the teacher. That I consider as the greatest loss in a University system! While hoping that improvement of the lower forms of education will soon remove these difficulties in our University system, I cannot help noticing with regret that in the executive organizations of our academic system, the student element is entirely absent. Nothing teaches a man more than responsibility, and the feeling that he is of the system. In Soviet Russia, this method of introducing the student element in the executive bodies of schools and colleges has been productive of such good results that we outsiders who really care to make our educational institutions part and parcel of our organic growth, should lose no time in adopting this novel system.

I have so far then pointed out four of the main defects of our University educational system : *the medium of study*, *the absence of elimination*, *the system of compulsory lectures*, and *the non-participation of students in the organization*. Of the many other defects probably the one that deserves next consideration is the notion of regarding Universities as preserves for certain hall-marked people. This exclusiveness had any meaning so long as we believed that our system of preparatory education was infallible and that we could include within its fold all our educable people. Such claims are on the very face of them absurd, and when once we admit that the Universities should function as great research centres, their portals should be opened wide to any one, hall-marked or not, who has given evidence of originality or keenness. It will be difficult to assert for any educationist that such a catholicity will not make for much progress. On the contrary, knowing what a minute fraction of our people are receiving education, the hopeful uncertainty of 'full many a flower is born to blush unseen', would justify this departure from the orthodox notion of exclusiveness. If one took a census of the greatest of world's men and women, I fear he would be surprised to discover that the majority of them owe very little to Universities or indeed to any educational system. Shakespeare knew little Greek and less Latin. Our Keshab Chandra Sen and Rabindra Nath, Sarat Chandra Chatterjee, the prince of novelists and story-writers, Girish Chandra Ghose, the foremost of our dramatists, never crossed the threshold of the University. Whilst on the one hand, therefore, the charge of handling mediocrity in the University system is not altogether unfounded, the current Emersonian aphorism that 'Universities are hostile to genius', is, on the other hand, not wholly justifiable. Whilst Universities should be anxious to invite real workers for human progress, we on our part should see that they are rendered independent to do so. If I may quote from Mr. Wells, 'they (future Universities) will offer no general education at all, no graduation in arts or science or wisdom. The only students who will come to them will be young people who are specially attracted and who want to work in close relation as assistants,

secretaries, special pupils, collateral investigators with the devoted and distinguished men whose results are teaching all the world.'

I will now turn to the consideration of the 'regional' character of your University, a circumstance from which a State cannot perhaps escape when it undertakes to *control* and *maintain* its whole educational system. It is clear that the success or failure of this regional scheme depends entirely upon the broadmindedness of the State itself, and on the continuance of the policy of co-operation between its various departments and the University. In short, a regional University is often made to synchronize with the political phases of its originator, the State, and as such its destiny is uncertain. I am, therefore, ever conscious of the limitations of such a system from the point of view of the highest educational ideals. Looking, however, from the practical point of view, such a scheme is the only rational one to be followed by a self-contained state, and in fact paradoxical as it may seem from its name, it does not ordinarily exclude the ideals and aspirations of a University in the widest possible sense. A very important issue has to my mind been raised by this departure of yours. I will explain it by referring to the case of the Dacca University of our province, which unfortunately is essentially a replica of the Calcutta University. Now my contention is, 'Was it necessary within the same province and within 16 hours of easy communication to duplicate an institution? Would it not have been much better to create in Dacca University centre having special reference to the study of agriculture, jute, hide, fishery, forest products, boat and bridge-building, etc., and thus supplement the courses falling short in Calcutta and introduce research on problems of local interest?' To me it appears wanton; raising of stereotyped Universities without regard to 'regional' considerations is wasting economic power. And more. The very functions of Universities, which are so fundamentally different from those of schools, are made to approximate each other. Let us not then call such Universities by that dignified name, or if that is to be, the abode of our highest ideals of education and culture must be christened otherwise. Unfortunately, the misunderstanding of the functions of the two is too common, and we have thus amidst us a system which satisfies the requirements of neither. No wonder, therefore, the share of Indian contribution to the stock of world's modern culture and knowledge is as yet so small! Now, in your University, if you are strictly logical in your conception of regional University, you cannot go on adding faculty after faculty without due consideration to your regional needs. Naturally this remark does not apply so well to the humanistic faculties; but so far as the science faculties are concerned, it would be only proper if you rather stuck on to your regional notions. Thereby you will not only have introduced economy in your education, but will have made the University a living consulting body on matters of technical importance. Thus the University will ultimately be a productive institution, thriving by its own potence and not obliged to go round with the begging bowl! The vast industrial enterprises owned or initiated by the State will be the training ground of not only those that will subsequently choose industrial career, but will afford untold facilities to the expert investigators of the University, whose discoveries will bring wealth and fame to the State! This is an advantage which we in Calcutta cannot claim. At it is, the State departments or State manufactories are practically sealed books, and then there are not very many of them

I want here to make a few observations in connection with your intended department of technology about which I found a reference in your Vice-Chancellor's remarkable introductory speech on the Report of the University Re-organization Committee, on the 28th November, last year. Our experience of University technological education dates from six years back. The department was started with a pupil and colleague of mine at its head, well-trained both in the Universities and factories at home and abroad. Thoroughly conversant with local industrial conditions, and conscious of the inadequacy of fundamental training in the schools and colleges, he has been forced to make a compromise between the higher University ideal and the technical degree course. I frankly admit, he could do no better under the existing circumstances, when the race has first to be brought up to an industrial consciousness; and till the preparatory diploma and degree courses are satisfactorily established, our

University effort in this direction will continue to be an amalgamation of the two.

The question may be asked why was it then that the technological course in the University was started without previously creating diploma and degree courses? The answer is not unknown to your Vice-Chancellor. The princely gift of the late Sir Rashbihari Ghose brought this course of study within the curriculum of the University and although the main object of the endowment is to promote research in technology which is being so successfully fulfilled in the departments of Applied Chemistry and Physics, the creation of post-graduate courses in them was found necessary to recruit specially trained young men for the very purpose of research on the one hand, and for supplying the demand of manufacturing concerns on the other. The experience of the last six years has thus placed in our possession useful data for initiation of the junior courses which are contemplated at an early date, and as every year is passing, we are noticing a conspicuous improvement in the quality of the trained young men who, we hope, will soon prove their usefulness by being captains of industry! But in this happy expectation I am forced to strike a note of aged despondency. As I have already said, the advantage which your University students enjoy to-day or would continue to enjoy till many years, is not in the luck of the Bengalee students. Already signs of overproduction in the technological department are in evidence, and I fear if the productive industries do not increase in number or extend their enterprises, their education would be an economic waste. If, on the other hand, in spite of their University education, they would view manual labour in its true perspective and realize its dignity, they would continue to earn their living no less satisfactorily than the so called lucky 'Service' men. I know there are hundreds of uneducated soap makers on the other side of the Canal in Calcutta whose capital ranges from Rs. 500 to Rs. 50,000 who are their own experts, managers, salesmen, or boiling men, plying a successful trade, whilst our educated young men with spectacles, chair and table, are unable to support themselves. This should be an eye-opener. Lord Leverhulme's example should stimulate them. He commenced his career as an apprentice in a small grocer's shop. Whilst cheerfully preparing to embrace manual labour, they should be happy in the consciousness that their education has given them an advantage over their uneducated competitors in that the key to the secrets of nature is in their possession—it is now for them to wait and opportunely use it. I wish it were otherwise, but I regret that our social and educational systems are equally responsible for this state of utter helplessness of our young men. Degeneration started by the absence of a general sustaining ideal in the nation, a life of luxury and self-indulgence with some or the most depressing poverty with most, soon bring the brightest of our young men to a state of both intellectual and physical torpor. And education which should have elevated them, completes their wreck by supplying notes and digests!

Few probably pause to think now-a-days what the austere system of our past stood for, and what priceless reward in the shape of self-reliance it gave. In the abundance of heritage we are forgetting how to keep it. Of Carlyle and his contemporaries his biographer Froude says:

"They had no one to look after them either on their journey or when they came to the end. They walked from their homes, being unable to pay for their coach-hire. They entered their own names at the college. They found their own humble lodgings and were left entirely to their own capacity for self-conduct. The carriers brought them oatmeal, potatoes and salt-butter from the home farm, with a few eggs occasionally as a luxury. With their thrifty habits, they required no other food. In the return cart, their linen went back to their mothers to be washed and mended. Poverty protected them from temptations to vicious amusements. They formed their economical friendships, they shared their breakfasts and thoughts and had their clubs for conversation or discussion. When term was over, they walked home in parties, each district having its little knot belonging to it; and known along the roads as University Scholars, they were assured of entertainment on the way. As a training in self-dependence, no better education could have been found in these Islands."

I would earnestly plead, therefore, whether one is a votary of technology or of the school of Humanity, that the University of Mysore do not spare itself in checking those elements in its educational system which

may tend to subvert self-help in the student community. "Live hard", as said the iron philosopher, and yours will be the golden harvest.

Now, returning back to technology: A state or a country that aspires to be economically independent must develop all its natural resources to the fullest. As in a land where agriculture is the common source of living, the people must be agricultural in their bend, so must you who aspire after developing your natural resources create a technical bend amongst your population. It is a type of economic development with which Indians came to be acquainted only recently, and unlike agriculture, its manipulation and utilization would have to be acquired by bringing into existence altogether different traditions even in our primary schools. The mechanical bend of mind would have to be fostered, and the powers of accurate observation and experiment would have to be cultivated not at a later stage as is being done to-day, but from the very beginning. This is very important, and in fact the usual habit of feeling satisfaction at having been able to do a thing good enough must be discouraged. I know if I were to ask twenty young men here to measure a piece of wood, probably all of them would come near enough the true measurement, but not one would give its true dimension. These near-enough habits would have to be eradicated if any real success in technical education is to be achieved. Mechanical education which we were inclined to despise, the kindergarten methods and the like so powerful in developing observational powers in children, would have to be introduced to bring within the fold of education many more children whom we had by our older methods given up as hopeless.

I would just quote the working routine of a German school for very young boys and pass on (*Lux*, Vol. IV):

	Lower Grades hours per week	Middle Grades hours per week	Upper Grades hours per week
Religion	4	4	4
German	11	8	8
Arithmetic	4	4	6
Drawing	–	2	2
Nature Study	–	6	6
Singing	1	2	2
Gymnasium			
Hardwork	2	2	2

It would appear from the above that Drawing and Nature Study are included as courses of instruction even at the infant stage. Their significance need not be dilated upon. Whilst the latter supplies the themes, the former is as though the language of the Machine age!

So great is the demand of modern civilization on classified and conscious knowledge, that to overlook science and its practice even at the very early stage of teaching is no longer justifiable. The apparent difficulty in indroducing such studies at the infant stage arises mainly from our erroneous method of instruction. If the themes come first, the interest of children is so far excited that in the very effort to probe into them they will ungrudgingly learn the disciplines. Thus in the course of studying phenomena, they will be compelled to get enough exercise in reading, writing and arithmetic. There is no danger that they will fail to learn these things, without which they cannot study any of the themes. Herein comes the use of museums, galleries, exhibitions and the like, which are uptil to-day being used only by the adult, and that too indifferently. A large number of real teachers is thus necessary if we want to put the whole educational machinery into a correct form. And, as every well-trained child is an asset to the State, which ultimately brings wealth and prosperity to it, I leave it to the State to find out what position education should occupy in its Budget. Economy in education is a misnomer.

Gentlemen, I have yet two more points to emphasize upon before I conclude to-day. The first is essentially connected with inter-University relationship, and the second, the establishment of central institutes in different parts of India for promotion of research. The usual practice of inviting specialists for short courses of lectures though stimulating, is to my mind only a makeshift. If these distinguished men could be persuaded to reside in our Universities for periods of not less than six months, the impetus which we would then receive, and the research they would then be able to initiate would have lasting effect on the workings of the University. This intellectual exchange will lead not only to progressive realization of human cultural aspirations, but will bring in its train a deeper sympathy for the world of human relationship. In that state, a Brahmin, a non-Brahmin, a Mahomedan or a Christian, the

yellow, brown, black or the white will vanish, but they all will be considered a unit in the brotherhood of men.

The establishment of central research institutes is not a new phenomenon in this State, and Mysore probably has shown its highest appreciation of this system by her generous support to the Indian Institute of Science. I only deplore that in this continent of India where Nature has been so bounteous, many more institutes like the one in Bangalore should not already have sprung to explore into her resources. There can be no question to-day that human efforts, whether cultural or material, should abandon that straggling and isolated career of the past, and consent to team-work. These central institutes would have to divest themselves from all 'regional' traits, and work in harmony for the common good of the nation. Without being so, they can never be international.

Gentlemen, I will now conclude by showing you once again before I part what collossal waste of national intelligence we have allowed in the past by our scheme of University education, and how unqualified for the practical matters of life we emerge out of this machinery. I shall allude to the most heart-rending analysis of the situation by no less a man than Mr. K. Srinivasa Iyengar who, in the course of his Vice-Chancellor's speech in 1920, stated:

"Of 18,500 graduates of the University of Madras whose careers have been traced, some 3,700 have spent their lives in Government or administrative service, about an equal number are engaged in the teaching profession, and nearly 6,000 have gone into law. Medicine has had only 765 devotees, Commerce only 100, and Science a tiny fraction of the whole, 56." "You will search in vain," said he, "for any solid contribution to the sum of human knowledge amongst this magnificent number of 18,500!"

On top of this comes the news communicated only the other day by the Associated Press:

"Owing to large flux of candidates, about one thousand four hundred and fifty in number, taking degrees in person this year, the Syndicate of Madras University has decided to hold two convocations next Thursday, the first being held at 2 P.M., presided over by the Vice-Chancellor and lasting for about half an hour. The second convocation will be held at 4-30 P.M. the same day at which the Chancellor will preside."

In other words, the two Universities of Calcutta and Madras have become two huge factories for mass-production of Graduates! This inordinate, insane craze—almost a mania—for securing a degree has been working infinite mischief—it has become almost a canker eating into the very vitals of intellectual life and progress. A serious drawback incidental to, and I am afraid, almost inseparable from the present ill-understood and misconceived notions of University training is that the young man thus turned out betrays, as a rule, lamentable lack of initiative, resourcefulness and pluck when he is thrown upon the world and has to fight his way through it. The testimony of some of the greatest of men in Science or in practical business will reveal the urgent need for reform in our Universities. "I would not give a penny for the ordinary College graduate," says Edison. "An educated man is not one whose memory is trained to carry a few dates in history—he is one who can accomplish things. A man, who cannot think is not an educated man, however many College degrees he may have acquired" (Henry Ford). By a curious coincidence almost at the moment I was writing these lines, my eyes accidentally caught the telegram conveying the notable pronouncement by Mr. Morris who has been called the "Ford of England". "For business a University training is an absolute waste of time. Though there are exceptions, I never found a University training any use to my organization. The University won't confer the qualities essential to Commerce, but obliterates them if originally present. It does not give an understanding of the Workers' psychology which is essential to carrying on large-scale business. They absorb the idea that life is an easy thing and pay too great attention to sport and pleasure."

My intimate connection with several industries in Bengal for the last 30 years and more has given me a rude shock and sad experience in this respect, as far as University products are concerned.

My audience, I am afraid, is getting a bit nervous as being invited to address a Convocation of graduates, it may be thought that I have been utilizing this opportunity to preach a sermon against University education altogether. Nothing is further

from my purpose. My object is to sound a note of warning against the feverish craze in our young men to secure a degree, and the same to those Universities themselves who would lose sight of their highest ideals. I have already pleaded for a considerable elimination in the process of selection. No one should choose a University career unless he feels that he has an instinctive and internal vocation for it. A University should be a centre of scholarship, research and culture. Let those seek the portals of the academy who are prepared to dedicate their lives at the altar of Sarasvati, the Goddess of learning. "It has been my happy lot to enjoy the hospitality of a good number of colleges in the United Kingdom on two occasions as a delegate of my University to the Congress of the Universities of the Empire. What struck me most on each of those occasions was the richness of their products and our own poverty. Colleges of Cambridge or Oxford are reminiscent of the memory of the great men who shed lustre on their land, they have produced poets, orators, statesmen and men of science. A fellowship at one of these great seminaries of learning has enabled many a poor scholar to cultivate literature or science. If Trinity College, Cambridge, can boast a Newton, she can equally claim one of the greatest of the men of letters—Macaulay—as her own. A University should be a focus, radiating effulgence of learning and wisdom.

I tremble with joy when I think of the mighty service which University and well-guided education could offer to the nation in the course of a single generation, and my optimism soars even so high as to predict that with increased understanding of the power of knowledge, it would be possible to combat and banish disease, enliven all homes by prosperity and raise the human species to a much nobler height of intelligence. In this goal, think what part a University plays! In the words of Bertrand Russel, "All great art and all great science spring from the passionate desire to embody what was at first an unsubstantial phantom, a beckoning beauty luring men away from safety and ease to a glorious torment. The men in whom this passion exists must not be fettered by the shackles of a utilitarian philosophy, for to their ardour we owe all that makes man great." This is the function of a University.

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Detailed Contents.

PAGE

THE INDIAN CURRENCY REPORT—

I. The Case Against It:

By Sir Purshottamdas, Kt., C.I.E. 503

II. The Case For It:

By Sir Basil Blackett, Finance Member, Government of India .. 507

WOMEN IN INDUSTRY—

By Miss Margaret Bondfield, M.P. 520

A CALL FOR GREATER OUTPUT—

By W. Howard Hazell 521

WORKERS' IDEALS—

By Right Hon'ble Tom Shaw, President of the International Textile Workers' Association 522

PAGE

UNIVERSITY IDEALS—

By Syed Sultan Ahmad, Vice-Chancellor, Patna University 523

CO-OPERATION IN BOMBAY .. 528

INDIA'S ECONOMIC GREATNESS—

By J. E. Woolacott 530

ECONOMICS IN THE WEST .. 532

CANADIAN TRADE AND FINANCE .. 538

NOTES FROM LONDON 542

SESQUI-CENTENNIAL INTERNATIONAL EXPOSITION 547

INDIAN ECONOMIC NOTES .. 548

TOPICS IN THE JOURNALS .. 555

SUPPLEMENT—

Manufacture of Hurricane Lamps in India 1-3

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The Indian Currency Report.

I. THE CASE AGAINST IT.

By Sir Purshottamdas, Kt., C.I.E.

My views regarding the subject of the standard, the ratio, and the currency authority are expressed in the minute of dissent which I appended to the Report of the Royal Commission on Currency. I am aware that there is a school of thought which attaches first and primary importance to the question of the standard. I need hardly say that I sympathize with their ideal and their point of view. But the very substratum of a gold standard and currency which is adequate gold reserve threatens to disappear under the policy which the Government of India are pursuing to maintain the ratio at 1*sh.* 6*d.* It is for this reason that I attach more importance to the question of making the Government see that they should cease to persist to maintain the 1*sh.* 6*d.* ratio and bow to the forces of nature. It is therefore, I feel that the Indian Currency League that has been started in Bombay has acted rightly in putting in the forefront of its programme the question of the ratio. Our aim should be to prevent the dissipation of our gold reserves and to ensure by statute free flow of gold into India so that in the course of five to seven years we may have adequate gold reserve to justify the legislature in asking for gold currency.

I would also ask you to note what has happened since the Legislative Assembly postponed the consideration of the Currency Bill in the last session. The postponement was made because of the absence of materials on which members could form their own conclusions. There were only five to seven volumes of the evidence and appendices available for a body of 140 members. It is now months since the Assembly adjourned and upto now the volumes of evidence and appendices are not yet available in this country although they were said to have left London on the 20th August. In the circumstances it is justifiable to ask if it is the intention of the Government whether consciously or not to place the members of the next Assembly also in a position in which they will not be able to decide for themselves on the merits of the question. It is also the time when the report of the Currency Commission is still on the anvil and awaiting the decision of the legislature that Government have chosen to alter the basis of the index figures of prices published monthly at Calcutta, thereby rendering impossible a comparative study of the index figures of prices then and now. The Majority Commissioners of the Currency Commission have relied on the index figures to argue that there has been a general adjustment of prices. Since then world prices have fallen enormously and the alteration of the very basis of the index figures of prices is inexplicable.

Cultivators Hit Hard.

I shall now trace briefly the ruinous effects of the attempt to maintain the ratio at 1*sh.* 6*d.*

In the first instance, it has prevented the marketing of the various raw materials abroad. Cotton is one of the chief commodities which contributes to the balance of trade in favour of India. During the last few months owing to the wrong parity between the so-called appreciated Indian rupee prices and the American prices, the parity has been against India and not only has no cotton worth the name been sold on the continent or in Japan but a large quantity of American cotton has been actually imported for use by Indian mills in substitution of Indian cotton Nor is

cotton alone in this respect. Other produce also have suffered equally. In this connection it is worth while to study how other countries have dealt with fall in prices of commodity like cotton. In America a combine has been formed to take off from the market a considerable portion of the American cotton crop and to store it so that prices may not further depreciate. In Egypt, the Government have come forward to the rescue of the cultivator by offering to advance him money at low interest to store up cotton. Following is a relevant portion of a bulletin of the Egyptian Government on the subject, it runs :

In order to stop the present crisis and to prevent the overflow of cotton on the market the Government has decided to give advance to cultivators on account of their cotton on favourable terms that will amply safeguard their interests. These advances will be given on a large scale which will allow the inclusion of the largest possible number of cultivators. The Government has decided to pay the cost of these (storage) operations and only a part of it on the cultivators. It has accordingly fixed the rate of interest at four per cent per annum if advances are in great demand. This will be the sole expense to which the borrower will be liable and will cover all charges including storage.

In contrast with the attitude of the American and Egyptian Government is the action of the Indian Government which not only renders no help to the cultivator to get the best price for his produce but by appreciating the rupee deprives him of 12½ per cent of the value of his produce in rupees than what he would be entitled to receive even at the depreciated world prices.

Industrial Stagnation.

Second effect of the attempts to maintain ratio at 1*sh.* 6*d.* has been to delay marketing of Indian crops and to bring trade and industry to standstill and by policy of deflation and contraction of currency to compel cultivators to market their crops at prices which leave them no margin and are ruinous to their interests. It is now a fashion for the Government of India to speak of the cotton industry as suffering from depression. I would like them to mention of any industry in India which can be said to be in normal condition. The jute industry may be cited as the one exception. While I would be the last person to grudge the jute mills the benefits of the monopoly they enjoy I feel that it can be safely said that what the jute industry is earning at present is at the expense of the jute producer in Bengal. Barring jute industry, I would like to hear of any two industries in India which have been remunerative or are not suffering from the non-adjustment of the higher ratio.

As regards the condition of our industries, I can quote the Controller of Currency who, in para 7 of his letter, dated the 20th September, to the Government of India regarding the last loan, says :-

"Conditions were extremely favourable for the floatation of the loan. The public distrust of industrial issues brought about by the large losses incurred in industrial investments during the last three or four years still continued and for some months there had been a growing demand for Government securities while the supply of such securities was less than normal owing to the absence of a cash-Government loan in 1925."

These are the circumstances which in the opinion of the Controller secured to the last loan 'a response unique in the history of Government loan in India,' which my colleagues called in para 209 'a significant circumstance,' a truly significant one, if appreciated in its correct bearing.

Rigging up the Rupee.

To the deflation of currency effected in order to rig the rupee up since 1922, I refer in para 68 of my minute of dissent. The figures of expansion of currency effected till 1926 are available and form rather interesting reading. The net expansion during 1925-26 was Rs. 9 crores against sterling securities and that is without taking credit for emergency currency which I deduct. Carrying forward, therefore, the calculation made in para 68 of my minute the expansion in five years works out to 52¼ crores which is an average of 10¼ crores of rupees per year against 22¾ crores per year which was, according to Mr. Kisch of the India Office, the average on the basis of five pre-war years. Against this half of the pre-war annual expansion of currency 20 crores have been deflated during the first six months of 1926-27. It has been said that this deflation has been effected because the money market was slack. Now should the marketing of India's crops even at the current unremunerative price money is to be made tight and the Indian ryot compelled to sell his produce at a sacrifice.

The Indian cultivator is hit in a number of directions by the artificial appreciation of the rupee. Not only does the Indian cultivator

get for his produce during the agonizing period of non-adjustment or mal-adjustment 12½ per cent less in rupees but he is also put in the position of his savings in silver depreciating to 12½ per cent over and above the depreciation in silver prices due to world causes. As you all know, silver has gone to a rupee price lower than the one which was known for the last forty years or more. In Bombay it was actually quoted at Rs. 51. It is INDEBTEDNESS OF PEASANTRY.

It is now about Rs. 55. At 1*sh.* 4*d.* the price would be 12½ per cent higher. The Indian cultivator therefore finds that not only he gets 12½ per cent less for his produce but his silver holdings are also depreciated by 12½ per cent. There is an apprehension in the commercial circles that the Government propose to sell silver in the London market. I telegraphed to the Finance Department of the Government of India for confirmation or contradiction of this news. I was informed that there was no truth in the press reports. I asked that a communique be issued announcing the intention of the Government in this respect. Government's reply is that they do not propose to make any announcement regarding their intentions in the matter of silver surplus holding. I leave it to you to draw your own inference. I ask what justification can the Government have for any sale of silver and consequent further depreciation of the value of silver merely to maintain the ratio at 1*sh.* 6*d.*

Nor is it that the Indian cultivator suffers only in regard to the price he gets for his produce and in the depreciation of his silver holdings. You all know the proverbial indebtedness of the Indian cultivator—handed down from generation to generation. A Punjab civilian had estimated the indebtedness of the Indian cultivator at 600 crores. As a result of the higher ratio this indebtedness will be increased by 12½ per cent. It is thus in all departments of life that the Indian cultivator is hit. In thus attacking the prosperity of the cultivator the Government forget the axiomatic saying of Sir William Hunter that "the prosperity of the prosperous is based on the prosperity of the poor".

The So-called Gains

Let us now consider to whom the 1*sh.* 6*d.* ratio does any good. It is said that the Central Government benefits to the extent of Rs. 3 to 4 crores in the Home charges. Sir Basil Blackett has said in this connection that when an adjustment has taken place there is neither loss nor gain to the Central Government. Is it not then a proof that the so-called adjustment of prices to the ratio of 1*sh.* 6*d.* has not yet taken place as assumed by the Majority Commissioners of the Currency Commission? Wherefrom do the Government get this saving of three to four crores except from the cultivators? The small gain of the Central Government is nothing but a fraction of the great loss that the cultivator is called upon to suffer.

In para 207 and para 208 of their report the Majority Commissioners say that the ratio of 1*sh.* 6*d.* will help their mission of provincial contributions. In this connection, I shall read to you interesting letters sent to the "Financial News" of which the Right Hon. Hilton Young, the Chairman of the Currency Commission, is the Editor and the admissions made therein. In a letter dated the 27th August, Mr. R. Hamilton writes to the "Financial News":

In your leading article to-day you express a desire to realize the benefits of stabilization with justice all round and without real injury to any interest. May I be permitted to suggest reasons why advocates of the lower rate for the rupee should be entitled to base their argument on the same desire? You urge that it means an increased burden on the Indian tax-payer in general. But the higher rate does mean an increased burden on one class namely the agriculturist. His rent as fixed in rupee of 1*sh.* 4*d.* rate becomes the same amount of rupees of the higher rate. As justly pointed out, he receives fewer of these rupees for his crop. That increases his public burden. As he is also generally heavily indebted, his private burden is similarly increased.

Increased.

The argument for the lower rate then bases itself on the admission that the general tax-payer will in that case bear the burden of stabilization while on the other the burden will fall primarily and unfairly on the agriculturist alone.

Commenting on this the "Financial News" editorially wrote: In India, as the State is the greatest of landlords, the rent question is substantially the land-tax question. It may, reasonably, therefore be considered as one of the strongest argument in favour of the Commission's recommendation and in support of the Indian Government's Bill that stabilization at 1*sh.* 6*d.* is precisely the measure which will enable the Government to revise and assess the land-tax on the 1*sh.* 6*d.* basis; since stabilization will do away with the margin

against fluctuation in the rupee rate which has now to be provided for. The elimination of that margin is one of the public benefits which the Bill foreshadows.

In reply, Mr. Hamilton wrote:

Does this (your comment) mean that the Government intends to reduce the amount of rupees due on account of assessment so that in future it will demand the same gold equivalent as it is entitled to receive under the settlement? If this is a correct interpretation of your comment then obviously the first argument for 1*sh.* 4*d.* rate falls entirely to the ground; in that case I suggest that an authoritative announcement to this effect be made before the Bill comes up for discussion.

In an editorial footnote the "Financial News" observes:

Assuming the present Currency Bill to be adopted assessment of the 1*sh.* 4*d.* basis as they fall in must be revised on the 1*sh.* 6*d.* basis.

In this connection, continued Sir Purshottamdas, it is desirable to remind you that the "Financial News" is the organ of none other than the Chairman of the Currency Commission. If the land assessments are reduced by 12½ per cent Bombay Presidency alone will lose about 75 lakhs while the provincial contribution the remission of which is held out as an alluring bait is not more than 56 lakhs. So much for the bait held out by the majority report of the benefit to the country by the remission of provincial contributions.

I wonder if it has struck many how the Government has, since the Armistice, been trying to make a change in the currency policy of India by an appreciation of the rupee. The Babington-Smith Committee recommended the change of ratio from 1*sh.* 4*d.* to 2*sh.* The recommendation of the Committee was carried through in a manner which when reviewed subsequently found nobody to defend it. On the very day, the 16th September 1920, that the ratio was changed to 2*sh.* the actual rate of exchange was 16.077. The sale of reverse councils followed at a cost which is estimated at 40 to 60 crores direct, to say nothing of indirect loss to agriculture, commerce, and industry. After this futile effort the rupee, however, was not left alone but I need not dilate on this. The correspondence between the Government of India and the Secretary of State for India published in the appendices to the report of the Currency Commission makes interesting reading.

Can Never Do Good.

I am convinced that whatever efforts the Government of India may make for the 1*sh.* 6*d.* ratio they can never do any good to the interests of India. The best satisfaction that the Government of India can have will be to put the ratio of 1*sh.* 6*d.* on the statute but the resources of any government are limited and those of the Government of India are still more so. With such a colossal amount of £80 to 90 millions in London in the Paper Currency Reserve in 1920 they found that they could support the 2*sh.* ratio only for a few months after which the exchange rate broke in a manner which compelled the Government of India to confess that they had to wash their hands off that dubious business. The resources of the Government of India to-day are nothing like the eighty or ninety millions that they had in 1920. The balance as far as I can see left with them is £14 millions sterling securities in the Paper Currency Reserve and it is a very slender resource at the best. It is therefore necessary to prevent any further panic amongst the people and recast the policy of the Government of India before it is too late. Should the Government of India, however, not heed these facts and try to overlook them or gamble on the off-chance of something turning up to support their policy, my grave apprehension is and I say this in all seriousness that they say, even though they may not like it expose India to the risk of having in the course of a year or two to a currency which will be looked upon by every other country as a depreciated or watered currency in the same way as unfortunately prevails in France, Germany and other central European countries. In the case of these countries they were either fighting for self-existence or for unwarranted gain territories. In the case of India no such justification exists. It will be a sad day for the British Government should they in their mad pursuit for the appreciated rupee unwittingly make a really depreciated currency a matter of fact in India, I am honestly convinced that the policy that is being followed may, should the next year be a lean year for India, lead to this danger.

Selling Labour against Capital.

Before I conclude I wish to refer to the attempt that is made to set labour against capital. The majority report of the Currency Commission observes:—a return to 16*d.* will result in an 'arbitrary reduction of the real wages of labour!' But is it reasonable to expect labour to be said at the same number

of appreciated rupees when adjustments are complete? Will the dilapidated agriculture and industry of India be able to afford this at the end of the admittedly painful period of adjustment? Or is the reduction in wages then expected to follow and to be accepted without protest by labour? And in the meantime is unemployment of the labouring classes and the clerical classes to be allowed to increase as factories close down owing to non-adjustment to higher ratio or agriculture becomes unremunerative and the ryot discovers his incapacity to pay on the 16*d.* gold basis? I do hope leaders of labour will not walk into the spider's parlour of the Government currency policy.....

No country can afford to experiment with its currency policy and India has not the capacity to stand another shock at an effort to appreciate her statutory ratio within seven years of the last one. Should the Government unfortunately persist in their policy which does not meet with the approval of the country, I hope that you will all continue your efforts to secure the redress of the grievous wrong that is sought to be done.

Our grateful thanks are due to those like Sir Victor Sassoon who, although he stands to gain most in his individual capacity by a higher ratio, has come forward to champion the cause of the Indian agriculturist realizing that in his prosperity is bound up the prosperity of the manufacturer, trader, and all classes of people.

II. THE CASE FOR IT.

By Sir Basil Blackett, Finance Member, Government of India.*

A year ago I had the privilege of addressing the University of Delhi on Indian banking and monetary progress. My subject to-day is closely connected with my subject of a year ago, and I am grateful to the University for offering me this opportunity of following up some of the topics which I then dealt with. Many of the members of the Currency Commission were present on the last occasion; but they were only just beginning their labours and in my address I endeavoured to leave on one side those aspects of Indian banking and monetary conditions which concerned exchange and exchange banking. To-day the subject of my address is the Report of the Currency Commission and their far-reaching recommendations. It is a particular pleasure to me to know that in coming to the Delhi University I am coming to the seat of a distinguished authority on Indian Currency, Professor Chablani, who both by the issue of an important study of Indian Currency and by contributions to the Press in elucidation of the Report now before us, has not only added lustre to his own name and to that of his University, but has done something even better. He has illuminated a dark subject.

You will all have seen the announcement made a few days ago that after considering the Report of the Commission the Government have decided to accept their recommendations as a whole, subject only to the qualification that they must retain liberty to give further consideration to details in so far as this may be necessary. The necessary legislation will be introduced in the Indian Legislature during the forthcoming Delhi session. The subject-matter of my address to-day therefore is one which will come prominently before the public in India at an early date for discussion and decision. The object of all interested in Indian Currency reform must be to do what in them lies to secure as wide a discussion and as complete an understanding of the Commission's recommendations as is possible. The more light that can be thrown on the Commission's Report the better. My purpose to-day accordingly is exposition rather than advocacy, though I shall not refrain from advocacy where it seems desirable.

Keynes' School and Vested Interests.

In view of the persistence of some of the counsel for the other side, it seems unavoidable that I should speak on the subject of the ratio. I do so unwillingly as I did not want to be controversial. My anxiety throughout has been that the Commission's recommendations should be studied and weighed in an atmosphere of calm deliberation, and that contention or at least contentiousness should be avoided. India is deeply interested in right conclusions being reached and put into operation, and a spirit of controversy not only prejudices judgment but also involves the risk that we may lose the whole of the great benefits which are, I believe, capable of being derived from the Commission's Report. There are some belonging to what has come to be known as the Keynes' School who oppose the

* Lecture delivered before the Delhi University.

Gold Standard in all its forms, and there are even more Crypto-sites, and they are attacking the Commission's Report as an indirect means of attack on the Gold Standard. There are vested interests which would like to prevent or postpone change and leave Indian Currency much as it is. A deadlock will mean playing into their hands. In regard to the ratio, I have hitherto made no attempt to controvert the arguments and attacks, many of them somewhat exuberant, of the supporters of what is called the 1*s.* 4*d.* ratio, in the desire not to be controversial and not to magnify this minor question and give it an importance out of all proportion to its merits. My appeal has not been listened to, and I must reluctantly begin to-day by dealing as briefly as I can with this subject.

The Ratio.

The first observation I have to make is that it is misleading to talk and think of the question as one between a ratio of 1*s.* 4*d.* and a ratio of 1*s.* 6*d.* Neither side advocates the fixation of exchange in terms of sterling or even of British gold money, and unless we first get it clearly fixed in our minds that to talk of a 1*s.* 4*d.* or 1*s.* 6*d.* ratio is merely to use a convenient, though inexact, description, we may easily fall into error. The advocates of 1*s.* 4*d.* desire that the statutory ratio of the rupee should be fixed at 7.5334 grains of gold; the advocates of 1*s.* 6*d.* propose that it should be fixed at 8.4751 grains of gold. This distinction of terminology is important in that it is desirable to stress the fact that under the Currency Commission's proposals the standard of value in India will no longer be either the rupee or sterling, but gold and gold alone.

My main difficulty in dealing with this question is that there seems to be very little to argue about. I said in Rangoon that the question between 1*s.* 4*d.* and 1*s.* 6*d.* is a dead issue. This is not an argumentative proposition; it is simply a statement of fact. The question will of course come before the Legislature again. But to anyone who really goes deeply into the matter the proposal that having at last painfully attained stability we should suddenly and violently alter the ratio from 1*s.* 6*d.* to 1*s.* 4*d.* and forego all the advantages gained by stabilization during the last two years, and deliberately start a new and painful period of disequilibrium with all that it entails, is simply unthinkable. There is evidence, as is not unnatural in such matters, of considerable confusion of thought in what is said and written on the subject. I admit at once that an arguable case can undoubtedly be made out for the view that in the course of the last four years the Government of India ought to have managed things differently, so that the ratio might now have been 1*s.* 4*d.* gold, that is 7.5334 grains to the rupee. I do not accept this criticism and have more than once explained my reasons. But it has some strong supporters. For example, it is held by Sir Stanley Reed who nevertheless comes to the conclusion that it is right to retain 1*s.* 6*d.* now. As Sir Stanley recognizes, it is only as a theoretical proposition relating to what might have been, not as a guide to what is now practicable, that it can be reasonably argued. Yet many of the arguments used in favour of reducing the ratio to 1*s.* 4*d.* now are simply an echo of the arguments for that proposition.

Present Currency Position.

The view that the Government of India ought to have managed things differently so that the ratio might now have been 1*s.* 4*d.* gold involves the admission that the ratio has necessarily depended on Government management. At the very beginning of my memorandum submitted to the Currency Commission (Appendix VII) I wrote as follows:—"The currency of India, as of almost every other country in the world, was driven away from its moorings by the war, and as in the case of the U. K. till last April, it now consists of an inconvertible medium of circulation (the note convertible into the rupee and the rupee in essence an inconvertible note printed on silver) whose value both for internal and external purposes has depended on the supply in relation to the demand, that is, has been the resultant of the three factors of world prices, internal trade conditions, and the Government policy in controlling the available supply. Of these three factors, the last has on the whole been the least important, though its importance has been continually increasing as conditions have become more normal and demand has overtaken supply." The ratio of 1*s.* 4*d.* could only have been brought into effect and maintained by more intervention, not less intervention on the part of the Government, that is, by more management or, as our opponents like to call it, manipulation. In order to provide a more abundant supply of currency and thereby to depress the value of the rupee to 1*s.* 4*d.*, more currency would have had to be created by the Government. Curiously enough, the advocates of 1*s.* 4*d.* avoid using the word management or manipulation when the Government add to the currency; they

look on with approval when currency is being expanded, but when the Government refrain from expansion, and still more when they contract the currency, their action is denounced as illegitimate and characterized as manipulation. I have said again and again that I think the present currency system and practice put an undue responsibility on Government in this matter; that is one of my strongest reasons for advocating change. But so long as that responsibility exists, the Government cannot refrain from exercising it. If they had neglected their duty and done nothing since the beginning of 1923, either to expand or to contract the currency, we should indeed have had all sorts of violent fluctuations, but the tendency would have been for the rupee to rise much higher than 1*s.* 6*d.* The attempt to picture 1*s.* 4*d.* as the natural ratio and to accuse the Government of maintaining a higher rate by manipulation turns out therefore to be a complaint that the Government have not done as much manipulation as the advocates of 1*s.* 4*d.* would have liked. In so far as either ratio can be called natural it is the ratio of 1*s.* 6*d.*

An Erroneous Idea.

Behind this dislike of contraction and affection for expansion there seem to lurk not only the usual inflationary tendencies which were rampant a few years ago in the Continent of Europe and were not unrepresented in England, but also the erroneous idea that a currency must always naturally expand. This idea seems to be based mainly on too close attention being paid to what happened in India from 1900 to 1914, quite apart from what happened during the war. During that period world prices were steadily rising, and Indian prices even more steadily. In India this was a reflexion not only of the increase in world prices, but also in part of the increase of population and of the small but gradual rise in the standard of living. In a period of rising prices it is natural that currency requirements should expand. The position to-day is quite different. World prices fell rapidly in and after 1920 and have on the whole tended to fall throughout the last four years. Currency requirements naturally contracted with the fall in prices. In England, for example, the total of Bank of England and Currency notes in circulation fell from £438,000,000 on the 30th September 1925 to £428,000,000 on the 30th September 1926. That there should be a corresponding tendency in India during this period for currency to become surplus is exactly what would be expected in any case and special factors have been at work in India, such as the replacement of rupees in hoards by gold and an increase in the habit of banking and investing. The Government would have failed in their duty if they had not acted accordingly in order to prevent any risks to stability from arising out of the existence of a surplus of currency in circulation. The recent ease in the money market belies the accusation that the Government have been making money tight.

No Bearing on the Question.

I have shown that the question whether or not a different course might have been pursued in recent years has no practical bearing on the question whether at this stage 1*s.* 4*d.* ought to be substituted for 1*s.* 6*d.* and that 1*s.* 4*d.* can be brought about only by increased Government manipulation of the currency. The idea of a sudden change from 1*s.* 6*d.* to 1*s.* 4*d.* has only to be examined to be rejected. A reduction to 1*s.* 4*d.* would be conceivable only in the event of the Government's finding such difficulty in maintaining 1*s.* 6*d.* as to be compelled to go back on their declaration of intention to maintain that rate. There is not the slightest ground for supposing that anything of the sort will happen. The reserves and the other resources of the Government are ample, as is shown for example by our recent action in strengthening the reserves by paying off 5 crores of created securities out of balances. The position is very different from that of 1920 when there was a large budget deficit and a frontier war was in progress and when Government were in daily difficulties for money. We have maintained 1*s.* 6*d.* without the least trouble and without undergoing even the normal seasonal stringency in the money market during a period of a somewhat unusual character when the rate both for long term and short term money has been considerably higher in London than in India and the beginning of the busy season has been delayed in an unexampled way. Moreover, though the recommendations of the Currency Commission do not involve any real change in the position regarding India's requirements of silver for currency purpose, they have affected the silver market by drawing attention to the facts, and this has meant an extra strain on exchange. So far from causing stringency in the money market the period of stability at 1*s.* 6*d.* has coincided with a period of unusual ease in Indian money conditions. If proof were really needed of the ability of the 1*s.* 6*d.* rate to stand up against a strain, proof is there in abundance.

Crocodile Tears.

Attempts are being made to import prejudice by representing 1*s.* 6*d.* as involving a bounty to the foreign importer and that good agriculturist Sir Victor Sassoon weeps tears over what he represents to be the loss caused to the agriculturist by the 1*s.* 6*d.* ratio. He was more frank when he told the Commission that the 1*s.* 4*d.* ratio would enable him to reduce the real wages of his employees without reducing their money wages, and at the same time enable him to sell his products to the consumers, who consist mainly of the agriculturists and the employees, for a larger number of rupees. A policy deliberately aimed at reducing the purchasing power of all money wages and increasing the price of all that he buys against the consumer will surely not appeal to the Government or the people of India. It goes directly contrary to what must be the aim of every reformer in India, the gradual raising of the standard of living of the masses. If anyone thinks that this is an unfair presentation of Sir Victor Sassoon's views, I recommend him to read Sir Victor's evidence before the Commission. No one maintains that by altering the ratio you can make anything more than a temporary change, and that only as the result of introducing instability, in the general relation between prices of one kind of commodity and prices of another kind. No doubt you can help the middleman temporarily to get bigger profits at the expense of the producer and the consumer; and enable him to take an extra toll both when he is buying from the producer and when he is selling to the consumer. But after a relatively short interval prices must readjust themselves. The readjustment takes longer in some cases than in others; in a few cases it may take a very long period indeed, but in the vast majority of cases the change takes place quickly, though many of the processes involved are explosive, as for example, the levelling up of taxation. It is a curious fact that nearly all the arguments of the Currency League have been repudiated in advance by Sir Purshottamdas Thakurdas himself. In paragraph 177 of the Report of the Commission it is written:—"We wish to make it clear that the essential and, as it seems to us, the decisive factor is the extent to which the prevailing rate of exchange is reflected in internal prices. We are unanimous in holding the view, and indeed it is a proposition which it would be difficult to controvert, that if it can be shown that prices have to a preponderant degree adjusted themselves to the existing *de facto* rate, then that rate must be adhered to."

Changing Ground.

Sir Purshottamdas agrees with the rest of his colleagues in this incontrovertible statement. He differs from them in saying that in his view prices had not, when the report and the minute of dissent were being written, readjusted themselves to a preponderant degree. We are entitled to assume that Sir Purshottamdas does not now repudiate the views expressed by him in his minute of dissent. He cannot now change his ground completely and adopt arguments which are at variance with those views. I ask him, therefore, to take an early opportunity of repudiating all the arguments of the Currency League which are inconsistent with the view that the only question is whether or not prices have adjusted themselves to the 1*s.* 6*d.* ratio. If he did so, the League would have little left to argue about as regards the ratio, and will, I trust, turn its attention to the study and elucidation of the rest of the Report, on which the views of Sir Purshottamdas and his colleagues are in the main in harmony. If the object of the League is really to instruct public opinion impartially on currency questions, it has my hearty support in its beneficent task, and I should be delighted to become a member if it will admit me.

Logical Errors.

The Minute of Dissent is dated June 1926, but most of the figures and statistics in it relate to a date not later than about February 1926. In that minute Sir Purshottamdas has tried to prove that readjustment of internal prices had not taken place to a preponderating degree. The attempt was a *tour de force* and the minute of dissent no doubt presents the case as well as it could be presented. But it is not surprising, in view of the pressure of facts pointing to the opposite conclusion, that ably as the minute is penned, there are some errors both of arithmetic and of logic in the document. We may perhaps explain as a misprint the statement in paragraph 138 that 79 per cent of the people of India subsist on agriculture and 21 per cent subsist by other means. The official statement from which these figures are taken shows that they should be 71 per cent and 29 per cent, the 71 per cent including of course many landless labourers. But serious fallacies have crept into the argument in paragraphs 91 and following. In paragraph 95, for instance, the Minute of Dissent refers to the rise in the gold parity of the rupee from 90 in July 1922 to 114 in

February 1926, *i.e.*, an increase of 27 per cent, and proceeds to say that Calcutta and Bombay prices fell from 185 to 155 or by 30 points, while a fall of 50 points (27 per cent of 185), was to be expected. But the amount to be expected for full adjustment was not 50 points but 39, since a rise of 27 per cent in the first position corresponds to a fall of 21 per cent, not 27 per cent, in the other. Thus since the world price level was 150 both at the beginning and the end of the period, the adjustment was not on Sir Purshottamdas' figures 30–50 or 60 per cent as he says, but 30–39 or 77 per cent, leaving 23 per cent, not 40 per cent, as the extent of the then lack of adjustment. Similar arithmetical errors occur in paragraphs 94 and 96, as well as in 95, all of them tending to make the lack of adjustment appear greater than it was.

In paragraphs 91 and 94, if the figures given are carried on to May 1926, the month before the report was signed, the appearance of want of adjustment is once again much diminished. In paragraph 91, if comparison is made between May 1925, when the rupee finally reached 1*s.* 6*d.* gold and May 1926, the table would show :–

	Calcutta prices.	United Kingdom prices (Board of Trade).
May 1925 ..	164	159
May 1926 ..	150	145
	14	14

Thus instead of a rise of 1 point in Calcutta and a fall of 9 in London, there is a fall of 14 points in both places.

In paragraph 94, if the figures instead of stopping at June 1925, are carried on to May 1926, the following is the result :—

	Gold Parity of rupee.	U.S.A. prices.	Calcutta rupee prices
December 1922 ..	95	156	176
May 1926 ..	112	152	150

A rise of 17 per cent in the gold parity of the rupee called for a drop in Calcutta prices (if world prices remained at the same level) of 15 per cent, *i.e.*, from 176 to 150, which was the exact amount of the drop. But the drop in world prices would itself have reduced the Calcutta price of 176 to 171, 15 per cent of which is 26, while on the changed value of the rupee prices dropped 21 points, a difference of only 5 points. On this view, using the same index numbers as are used in the Minute of Dissent, 80 per cent of the change in prices corresponding to the 1*s.* 6*d.* rupee had already taken place a month before the Commission reported.

Gold Prices.

So far I have dealt with the mathematics of the Minute but in paragraph 88 the logic takes a very curious turn. Dealing with the arguments of Sir Purshottamdas' colleagues it says : "They (the colleagues) then proceed by means of a graphic representation to show that prices in India in terms of gold have, since the middle of 1922, generally moved parallel to movements in world prices in terms of gold. This is, of course, as it should be, for after all there is such a thing as a world price level measured in terms of gold, to which prices in any country, measured also in terms of gold, must in general trend correspond, if not in actual level." Does not this give the whole case away ? The contention of the advocates of 1*s.* 6*d.* is that there is a world level of gold prices to which the gold prices in any country must tend to correspond. The rupee has been stable in terms of gold at 1*s.* 6*d.* gold since May 1925, and had been in close approximation to that figure for six months previously ; is it not therefore, in Sir Purshottamdas' words "as it should be" for Indian gold prices to have adjusted themselves during that period to world gold prices ? The Minute of Dissent continues immediately after the point where I stopped with the following words : "If Indian prices in terms of gold have moved approximately parallel to world prices in terms of gold, English prices in terms of gold have done the same." This is exactly what Sir Purshottamdas' colleagues claim. But what does he mean when he goes on to say, "I shall, therefore, confine myself to movements in Indian rupee prices" ? I have puzzled for a long time without success over the problem, What is the difference between Indian rupee prices and Indian prices in terms of gold ? If Sir Purshottamdas is right in saying that Indian prices in terms of gold have moved approximately parallel to world prices, Indian rupee prices must have done the same ever since the rupee became stable in terms of gold, and if that is the case, what is there left of the claim that rupee prices have not readjusted themselves to world gold prices at the level of 1*s.* 6*d.* ?

Pressure on Government.

The Report with the minute of dissent was published at the beginning of August 1926 and later in the month the matter came before

the Assembly. It seemed to the Government that, the case for 1*s.* 4*d.* being based on the argument that it was not too late to reduce the rate from 1*s.* 6*d.* to 1*s.* 4*d.* because prices had not had time to adjust themselves, they would be failing in their duty to the Legislature if they did not give the Legislature an immediate opportunity to discuss the question before it was too late. I did not agree with the view that prices had not adjusted themselves, and was prepared to argue it. But as was natural in all the circumstances strong pressure was put on the Government from many quarters in the House to postpone the Bill. I made it clear that the Government must and would continue to maintain the 1*s.* 6*d.* ratio pending effective discussion in the Legislature, and that every day was destroying whatever validity there might be in Sir Purshottamdas' one argument for 1*s.* 4*d.* It was obvious that in so far as readjustment had not already taken place, it would inevitably tend to complete itself during the six months which must elapse before the question could come before the Assembly again, and it was a patent fact well understood at the time that postponement of the Bill must necessarily have results hardly distinguishable from acceptance of the *status quo*. My own view is that the arguments of the Commission are conclusive in showing that prices in India had adjusted themselves to the 1*s.* 6*d.* ratio to a preponderant degree at the time when their Report was being written. The considerable period which has elapsed since then must have very nearly completed that readjustment if and in so far as it was incomplete then. It is inconceivable, therefore, that by the earliest date at which the matter can again be brought before the Legislature, the readjustment will not be to all intents and purposes complete. I therefore claim Sir Purshottamdas' own minute of dissent in support of the view, which he unanimously shares with his colleagues, that if prices have to a preponderant degree adjusted themselves to the existing *de facto* rate, then that rate must be adhered to.

The Gold Bullion Standard.

I have been compelled to devote quite a large part of the available time to the discussion of the ratio, a fact which I regret both because I see no object in continuing controversy on that issue and because I am afraid lest controversy on that issue may divert attention from the other recommendations of the Commission which, taken as a whole, offer an opportunity which may never recur of registering a notable advance. If the steps which have to be taken to bring these recommendations into operation are to be taken rapidly and effectively, the proposals must be reasonably understood in India and the fullest possible information must be placed before the country. Honest criticism will be welcomed provided that it is constructive and unbiassed; criticism that is purely destructive, if it has any result at all, can result only in prolonging the life of the present currency system, or absence of system, which we are all agreed should be ended. Above all, our study of the subject must have relation to the practical possibilities. There is a school of people who say "nothing will satisfy us except a gold currency standard—therefore give us a gold currency standard and a gold currency at once." Such an attitude is not helpful. The Commission had before them proposals which had been carefully worked out by the Finance Department for effecting a transition from the present system to a gold standard with a gold currency within a period of about 10 years. I think that anyone who will go honestly into the evidence for and against that scheme will agree that no alternative method of arriving at a gold currency could be framed which would have quicker results. The scheme was unanimously pronounced by the Commission as involving risks to India which it would be unsafe for her to face.

Agreement.

On the question of the ratio Sir Purshottamdas Thakurdas was in the position of a good man struggling with adversity and I have regretfully had to differ from him somewhat acutely. In regard to the question of the gold bullion standard, I find myself in the fortunate position of being almost in entire accord with Sir Purshottamdas. He rejects some of the arguments of his colleagues against the Finance Department's schemes; so do I. Yet he agrees with his colleagues in regarding it as involving greater risks than India ought to take and in preferring to it a different method of approach. I agree with him. The conditions which I laid down in my advocacy of the scheme as pre-requisite to its adoption have not proved capable of complete realization. As practical men we must recognize that it is not a scheme which can be immediately adopted. Then again as regards a gold currency, I agree with Sir Purshottamdas in regarding it as a stage in currency development which India will probably not be able to avoid even if she wants to. I made it clear in my evidence

that I did not regard a gold currency as ideal, but I expressed the view that if India was to reach the system which I regarded as ideal, *viz.*, a currency absolutely convertible into gold but with gold coins not effectively or appreciably in circulation, she would probably have to pass first through the stage of having gold coins available at will into which all other forms of currency would be convertible. I think I am correct in claiming Sir Purshottamdas' complete concurrence in this view.

The Greatest Difficulty.

Sir Purshottamdas and I agree therefore in rejecting some of the arguments against the Finance Department's scheme and yet accepting the verdict. Probably the greatest difficulty both as regards this scheme and in regard to Indian currency in general is the doubt as to the amount of silver rupees in existence. In considering any scheme for reforming Indian currency it is essential that those on whom the responsibility rests should envisage the problem from its most difficult aspect. If they want to carry through successfully any reform, they must be prepared to surmount possible difficulties at their maximum. Such statistics as are available in regard to the amount of silver rupees in existence are fully given in the Commission's Report and appendices. The Finance Department's scheme was obliged to assume that the normal demand for rupees in India for purposes of ordinary circulation could not with absolute safety be put higher than 150 crores, and that the amount of coined rupees still in existence could not be safely put lower than 350 crores. It was recognized that these figures probably erred on the side of safety, and my own guess at the most probable figures would be that the amount of rupees still in existence probably does not exceed 325 crores, and that not less than 200 crores are normally required for purposes of ordinary circulation in India. This would reduce the surplus to 125 crores. If these last figures are anything like accurate, 100 out of the 125 crores of surplus rupees are already in the Currency Reserve and the amount still hoarded in India is proportionately insignificant. But unfortunately we have no option but to work on the larger figures, and on that basis the final transition from a rupee standard to a gold standard can be made only with great caution and by gradual stages.

Root of the Problem.

The root of the whole problem of Indian currency is the existence of a large quantity of silver rupees and the long continued habit of the people in India of treating them as the standard of value, as they were till 1893. As practical men we must recognize that the Finance Department's scheme involved too great risks to be suitable for immediate introduction. We should, therefore, view with a favourable eye the gold bullion standard recommended by the Commission. If it does not introduce a gold currency at once, and if it makes it probable that the date of the introduction of a gold currency will be postponed longer than was contemplated by the Finance Department's scheme, on the other hand it provides a method by which India can at once reach the gold standard, and, if further experience does not modify her present desire for a gold currency, we can in due time graft a gold currency on to the new standard and reach our aspiration of a gold currency standard more quickly than is practicably attainable by any other method. The gold bullion standard recommended by the Commission is really stage one of the Finance Department's scheme. It makes gold the sole standard of value and makes the currency of India absolutely convertible into gold, but it so arranges matters that, while gold will always be available in exchange for currency in India, that gold will remain in the central reserves for use in supporting the exchange value of the currency, but will not go into circulation internally. India will retain complete freedom to buy gold in the market as at present and the bullion market will remain the ordinary source of supply for gold for non-currency purposes in India. The currency authority will not supplant the bullion market or be involved in supplying gold for ordinary internal demands for non-currency purposes. The Commission do not themselves think that it will be desirable to introduce a gold currency later on. They deprecate the use of gold in circulation in India and anywhere else. But the scheme is so devised as to enable India through her Legislature to convert the gold bullion standard into a gold currency standard with a gold coin available for circulation at some later date when the difficulties of transition from the present rupee standard to the new gold bullion standard have been fully surmounted. Meanwhile India is offered a currency system absolutely based on gold as the one standard of value and for practical purposes indistinguishable from the currency system in force in England to-day.

Significance of the Change.

The essential change from past practice is

that the rupee will cease to be the standard form of currency on which all other forms of legal tender depend for their convertibility. In place of this arrangement the silver rupee along with all other legal tender media of circulation will be convertible into specified amounts of gold bullion. This change is perhaps a little obscured by the fact that the unit of account under the Commission's scheme remains the rupee which both etymologically and historically connotes a silver rather than a gold standard. The real significance of the change can be brought out more clearly if we imagine the substitution of a new gold unit of account with a significant name in place of the rupee. Let us suppose, for example, that while adopting the whole of the Commission's proposals and retaining the unlimited legal tender privileges of the rupee and having no gold coin in circulation, we were to introduce a gold mohur of 8.4751 x 20=169.5 grains of gold as the standard of value and the unit of account. It would not be necessary to coin an actual gold mohur or put it into circulation. The mohur would simply be there as a unit of account twenty times the present value of a rupee. It is a curious but I think a true observation which Spengler makes in his 'Decline of the Western World' that the use of full-value metallic coins is an anachronistic survival in present-day Western civilization. There is no more necessity for the multiplication of physical sovereigns or gold dollars in order to enable the sovereign and the gold dollar to perform their functions as standards of value and units of account than there is for a multiplication of physical yards or tons or metres in order to enable the yard, the ton and the metre to serve mankind as standards and measures. Coinage and the circulation of coined money were epoch-making inventions of an earlier civilization and the habit and practice have survived into modern times: but the essential purpose served by coins in olden times can be well or even better served to-day by a common unit of account and of value in terms of which all accounts are kept, all commercial exchanges carried on and all media of circulation which we require conveniently expressed. So in India we might imagine ourselves adopting as our unit of account and of value a mohur of 169.5 grains of gold. Our rupee would be just as the English shilling is in relation to the pound sterling (though unlike the English shilling the rupee has unlimited legal tender rights) 1-20th of a mohur; our 5-rupee notes could be expressed alternatively as 5 rupees or one-quarter of a mohur, and our 100-rupee notes as five mohurs, and so on. To adopt this change now would at this stage tend merely to confusion I fear. The Commission were rightly anxious to effect the transition which they advocated, quietly and gradually and without violence. They were in a sense dethroning the rupee in so far as it had not already been dethroned in and since 1893, but they were anxious not to over-emphasize the change or to bring discredit on the rupee and thereby add to the considerable difficulties already being caused by the large return of surplus rupees into the Currency Reserve. My object in framing this imaginary picture is simply to bring out the inwardness of the change from a rupee to a gold standard.

A Difficult Transition.

The change in any case will not be altogether an easy one to carry through. Among other recommendations the Commission propose that when the Reserve Bank notes come into existence they should not be promises to pay so many rupees as the existing Government currency notes are, but should be notes purporting to represent a specified value in terms of rupees just as the English £1 and 10*s.* notes represent specified values in terms of sterling. The new Bank notes would then no longer carry an obligation on the part of the currency authority to give silver rupees in exchange in all circumstances, though the Commission are careful to lay down the condition that the currency authority must be under an obligation to provide at all times all the silver rupees needed for legitimate purposes of circulation. This proposal has been subjected to criticism in some quarters as involving risk of destroying confidence in the notes. This criticism is important and great care will be needed in handling the matter. The change proposed is in essence nothing more than a change of legal status which will be imperceptible in practice. The change is logically necessitated by the theory of the new currency system which makes gold the one and only standard of value. The position under which a note printed on paper has been convertible into a note printed on silver has in fact been a somewhat strange one for many years past. Under the new proposals of the Commission it will be logically very absurd to maintain the right of all other forms of legal tender to convertibility into silver rupees seeing that the essence of the system is that all forms of legal tender including the silver

rupee depend for their value in exchange solely upon their absolute right of convertibility into gold. In practice there is no reason why the change should not pass unnoticed. There will be an ample supply of silver rupees which the currency authority will be only too ready to utilize in the first decade of the new system. Everyone will still be able to get silver rupees as often and in as large quantities as he desires in exchange for other forms of legal tender. It is to be hoped that fears of what might and will not in fact happen will not be allowed to impede the adoption of this proposal, for it is of the essence of the Commission's scheme that the transition from a rupee standard to a gold standard which has been in process for 33 years should at last be completed, and that the new Indian currency system should slough off at last all the remains of the old skin belonging to its monometallic silver standard period. The transition will not be completed so long as the currency authority remains burdened with an obligation to provide silver rupees on demand in unlimited quantities. It was this obligation which played havoc with the Indian currency system in 1917, and started the troubles which we are still trying to end, and so long as it remains it will upset any conceivable standard. You may have a standard absolutely safeguarded against other risks, but if this obligation remains, it will revert automatically to the old monometallic silver standard when once the rupee becomes more valuable as bullion than as coin. A further important point is that so long as the obligation remains, it is difficult to place a reasonably low limit on the amount of silver rupees which may be kept in the currency reserves, and to frame suitable rules for the reserves of the kind required to ensure the convertibility of the currency of India into gold, if upon those reserves there is also placed the out-of-date obligation to convert that currency into silver rupees.

Gold Coin Rejected.

The essence of the Commission's proposals for a gold bullion standard is, as I have said, that all forms of legal tender in India should be absolutely convertible into gold bullion. They have rejected the idea of introducing a gold coin into circulation immediately on grounds which I think we must recognize as conclusive. The right of convertibility into gold had therefore to be given in such a way as to ensure that on the one hand there should be no risk of the currency of India falling below or rising above its gold value; in other words, that the right of convertibility should be automatically operative; and that on the other hand the currency authority should not be drained of the gold which it holds for currency purpose and forced to supply at the expense ultimately of the tax-payer gold ordinarily supplied for non-currency purposes in India by the bullion market. The Commission have solved this problem by the adoption of two interesting devices. One of these is as old as Ricardo who advocated it more than a century ago and is in actual operation in England to-day, the device of fixing a limit of 400 oz. of gold as the minimum quantity which the holder of legal tender can demand as of right in exchange for his currency from the currency authority. This leaves it to the market to attend to the retail demand for gold, while absolutely assuring to the holder of currency the exchange value of his holding in relation to gold, whether for external or for internal purposes. It is this provision which finally differentiates the gold bullion standard from the gold exchange standard. If is not sterling or dollars or the currency of any other country whatever that is the standard of value for India: that standard is gold and gold alone.

An Ingenious Device.

The second device adopted by the Commission is an ingenious one, and so far as I know, it is their own discovery. If the currency authority were required at all times to give 400 oz. of gold in exchange for an equivalent in legal tender at par, whatever the rate of exchange between the rupee and other gold standard currencies, it should be the cheapest market for gold in India for non-currency purposes at all times when the rate of exchange was below the gold import point. Either therefore it would have to try and keep the rate of exchange permanently at the gold import point, which would be undesirable in many ways, and would certainly tend to keep money tight in India, or it would have continually to import gold for non-currency requirements at the expense of the tax-payer and to the detriment of the effective working of the Indian gold bullion market. The Commission therefore propose that the price charged by the currency authority should include an allowance for the cost of importing gold, and should be so fixed as to set the currency authority free from the task of supplying gold for non-monetary purposes. There would be no charge if exchange were at the gold import point, the point at which the currency

authority would be naturally importing gold for monetary purposes. I need not go into the details of the calculations; they are given in full in the first schedule to the Report. All that is important is that we should understand the essential meaning of this provision. It is simply this: The currency authority will be statutorily required to hold reserves sufficient to enable it in all circumstances to sell gold for export when the rate of exchange falls to the point at which export of gold is required in order to maintain the fixed equation of 8.1751 grains of gold per rupee, that is, to the gold export point, roughly 1*s.* 5 25-32*d.* per rupee, and to import gold and buy gold otherwise imported whenever exchange rises to the point at which the import of gold is required to prevent the rupee from rising beyond the equivalent of 8.4751 grains per rupee, that is, to the gold import point, or roughly 1*s.* 63-16*d.* per rupee. The currency authority will buy gold tendered to it at any time by giving one rupee for every 8.4751 grains offered, but it will not be compelled to sell gold for non-currency purposes at a rate which throws upon the tax-payer any portion of the expenses of import.

These devices are open to no objection if we accept the view, as I think we must, that the immediate introduction of a gold currency standard involves too great risks and is not in India's interests. For very similar reasons the circulation of the sovereign and half-sovereign as legal tender in India cannot be permitted during the period of inauguration of the gold bullion standard. The place for gold in this system is in the reserves. When and if the time comes for the introduction of a gold currency in India and the conversion of the gold bullion standard into a gold currency standard, it will in any case probably prove preferable to mint a special gold coin, say, a gold mohur of twenty rupees, rather than to retain as legal tender a coin which represents a very inconvenient fraction in terms of rupees.

Gold Savings Certificates.

I need not stop to-day to discuss at length the proposal for introducing Gold Savings Certificates. They are designed to encourage saving and at the same time to give ocular proof of the reality of the gold standard. I am afraid the proposal to make the certificates payable in one tola bars will be found to offer undue facilities for dishonest practices, and it may be difficult also to offer a rate of interest higher than, say, 3 per cent if, as I think would be desirable, the certificates are to be issued free of income-tax and super-tax and without any limit on the amount which may be held by any one individual. These, however, are details which can well be left for later consideration.

An important recommendation is the proposal for the amalgamation of the Gold Standard and the Paper Currency Reserves. I may perhaps be allowed to refer the studious to my memorandum which appears as Appendix VII for a full statement of the case for reform. The anomalous position of the rupee as at once a note printed on silver and a coin with unlimited legal tender privileges into which all other forms of legal tender are convertible, has probably been responsible for the long continuance of the unsatisfactory separation between the two reserves whose functions are or ought to be indistinguishable. It will, I think, be universally agreed that the amalgamation of the two reserves and their subjection to a single set of statutory rules will be a great improvement on the present division into two reserves, one of which, the Gold Standard Reserve, has hitherto been subject to no kind of statutory control.

The Reserve Bank.

Thus far I have dealt only with proposals for a reform of the currency standard of India. The recommendation of the Commission in favour of the amalgamation of the Gold Standard and the Paper Currency Reserves does something to secure better control by the currency authority and leads naturally to a consideration of the recommendations of the Commission in regard to that nature of the controlling authority. They propose the unification of the control of Indian currency and credit policy under one authority which shall not be the Government. The new obligations to be imposed by statute upon the currency authority make it essential that the control should be unified and that nothing should impede its automatic working. As things are at present, the Imperial Bank is charged with the duty of supervising the banking reserves of India and making itself responsible for the credit policy of the Indian money market. In order to assist it in this task, it has the control of the balances in India of the Government of India except that small portion which still remains in the revenue treasuries, but it has no control over the balances of the Government of India outside India or over the currency reserves. The responsibility for control of the currency reserves is shared between the Government of India and the India Office and

even at the best of times the geographical distance which separates the two authorities who are jointly responsible must inevitably lead to vexatious delay where rapid and decisive action is imperative if things are to work smoothly. The arrangements for co-operation between the Imperial Bank in its control of credit policy and the authorities responsible for the control of currency policy have worked reasonably well but have been largely of a hand to mouth character. The unification of control over both the banking and the currency and credit policies of India under one authority is clearly a desirable reform if it can be achieved.

UNIFICATION OF CONTROL.

In the evidence which I gave before the Currency Commission I expressed strong preference for the unification of this control in hands other than those of the Government. My view was and is that the control ought to be in the hands of one single authority, but that authority ought to be in India and ought not to be the Government of India. It would be easy to elaborate the arguments for this view at great length, but I imagine that I am speaking to the convinced. The recommendation of the Commission is that all the functions of the Government of India and the Secretary of State in relation to control of Indian currency and the issue of notes, all their functions in regard to the management of the Reserves and to the remittance of funds from India for purposes of Government's expenditure outside India, and all work connected with the use of balances outside India for purposes other than the actual meeting of current outgoings (this last change involving an amendment by the Imperial Parliament of the Government of India Act), should be taken away from them, and entrusted to a Central Bank. They propose that that bank should be the custodian of all Government balances in and outside India, should keep the Government accounts and manage the Public Debt and should have a monopoly of the right of note issue. The Government of India and its legislature will determine the policy once for all by statutory enactment. Thereafter the whole responsibility will rest with the Bank. Finally in order to complete the unification of the currency and banking reserves of India, they recommend that all other Banks doing business in India should be compelled by law to keep a minimum proportion of their time and demand liabilities with the same Bank.

That part of the Commission's Report which sets out these proposals together with the evidence and appendices to the Report will, I venture to prophesy, become the *locus classicus* on the very important but hitherto ill-documented subject of Central Banking. The Commission either through their own members or through witnesses placed themselves in close touch with all the available sources of knowledge on this subject and have utilized the big stores of experience built up in recent years by the Federal Reserve system of the U.S.A., the new Reserve Bank of South Africa, the new Central Banks in Austria, Hungary, and elsewhere established since the war, partly through the help of the League of Nations and under the influence of the Genoa Conference of 1922, and they have also had at hand the accumulated knowledge on the subject of old established Central Banks, such as the Bank of England and the Netherlands Bank. The fruit of all this study is the Commission's recommendation in favour of a Reserve Bank for India. For they have proposed after a full deliberation, not the conversion of the Imperial Bank into the Central Bank for India, but the establishment of an entirely new Reserve Bank. This Reserve Bank is to confine its activities strictly to those which properly belong to a Central Bank. It is to be entirely a banker's bank and a banker to the Governments in India. It is not to do commercial banking business. It is to have the monopoly of the right of note issue in India, subject to elaborate statutory regulations in regard to the keeping of reserves. The building up of a reserve of gold and gold securities adequate for all emergencies, and the management of reserves of rupees and rupee securities in a manner calculated to secure increased elasticity combined with complete security, the control of Government balances which are to be deposited with it both in and outside India, the management of the remittance programme of the Government of India in strict relation to the automatic working of the currency system and to the maintenance of the absolute stability of the gold value of the rupee, and finally the duty of watching over and assisting the growth of banking in India generally,—these set out, though not exhaustively, some of the more important functions of the proposed Reserved Bank. Provision is further made to secure to the Bank complete independence from Government interference. Its Board is to be representative of the agricultural, commercial and

industrial life of India, and it is to manage its affairs with an eye solely to the interests of India, free from any Governmental or political bias, its shareholders being contented with a limited dividend, and all surplus profits are to be devoted, first to the building up of reserves, and then to the relief of central taxation.

Is the Ideal Attainable?

Such is the ideal which the Commission set before us. Can we attain to it? I have heard criticisms as to details. The other banks which cater for the internal banking needs of India, and the Exchange banks, are naturally examining the Commission's Report with a critical eye and trying to estimate the probable effect on their own fortunes of their adoption. But so far as I have been able to judge, the general principles involved have met with a favourable response in almost every quarter. It is recognized on all hands that they offer to India an immense advance towards more than one of her aspirations. At one stroke control of Indian currency and finance will be transferred from a centre situated at some point between Whitehall and Delhi into the sole control of India. And while geographically the control will be in India, the atmosphere in which that control will be exercised will be no longer a Governmental atmosphere, but an atmosphere permeated by the views of representatives of agricultural, commercial and industrial India.

A Disturbing Factor.

There is, however, one discordant note which threatens to disturb the harmony. In giving evidence before the Commission the Finance Department and I myself always spoke of the proposal as a proposal for the transfer of control to the Imperial Bank. It was only in a later stage of their deliberations that the Commission turned to the suggestion of an entirely new bank separated from the Imperial Bank. I know from what has been told me by many of the members of the Commission that they turned to the suggestion with reluctance. They were driven away from the idea of making a Central Bank for India out of the Imperial Bank and into the proposal for an entirely new Reserve Bank by the inexorable logic of facts. I may confess at once that my mind has been driven along the same course to the same conclusion. Those who care to read my evidence on the subject will see that I was fully aware of the immense difficulties of making the Imperial Bank into a Central Bank, and candidly confessed my own inability to solve the problem. But I trusted to the Commission's own galaxy of talent to accomplish the feat. In the end they found it beyond their powers, and were faced with the alternative of leaving the control where it is, divided between the Government of India, the Secretary of State and the Imperial Bank, or of recommending the establishment of an entirely new institution. And if they had been driven to leave the control where it is, they would probably have been unwilling to recommend the adoption of a gold standard at all.

Obviously no one would lightly adopt the last alternative, least of all the Managing Governors and other members of the Central Board of the Imperial Bank. Yet they did adopt that alternative in spite of the presence on the Commission of five members closely connected with the direction of the Imperial Bank. It is nevertheless not surprising that others in India who have not gone through the same experience of being driven from pillar to post in the effort to avoid the conclusion that a new Reserve Bank is unavoidable, should still hanker after the transfer of the duties in question to the Imperial Bank. I have every sympathy in this matter with the line taken by Sir Purshottamdas Thakurdas in the Minute of Dissent. Let the question be put, he says, to the shareholders of the Imperial Bank. If they are willing to accept the extra restrictions which must necessarily be imposed on the commercial activities of the Imperial Bank as a condition of its being granted a monopoly of note issue in India and control of the remittances of the Government of India, then let the Imperial Bank become the Central Bank. If they are not willing to accept those restrictions, then the Reserve Bank is the only remaining alternative.

The Imperial Bank.

If the implications involved are fully examined and the extent and nature of the restrictions adequately realized, I am fairly confident that the shareholders of the Imperial Bank would agree with what I understand is the definite view of the Managing Governors, that acceptance of such restrictions would destroy the utility of the Imperial Bank as a commercial Bank altogether. This is therefore a matter in which others besides the shareholders of the Imperial Bank are entitled to a deciding voice. The shareholders of the Imperial Bank have every title to claim that their 10-year contract with the Government of India must not be modified without their

consent before it expires in 1931. But even in the unlikely event of their being willing to commit suicide as a commercial bank in order to become the Central Bank for India, the Government and people of India ought not to agree. The emasculation of the Imperial Bank would give a bad set-back to the progressive extension of banking facilities in India. The twin needs of India in regard to banking are a strong Central Bank in whose hands the control of India's currency and discount policy and responsibility for her banking and currency reserves will be unified, and a vigorous development of banking facilities with the establishment of more branch banks and new agencies throughout India. And the plain fact is that one institution cannot fulfil these both requirements. Nor would it be fair to other banks or in the long run consonant with the interests of India to permit one single institution to monopolize the field. If the Imperial Bank is to continue to perform the admirable work it has been doing in the last five years in spreading branch banking in the mofussil, it cannot be subjected to severe restrictions on its daily activities. And it cannot be left with unrestricted powers to swamp all other banks with the help of a monopoly of note issue, freedom to deal in exchange (a vital necessity if it is to manage Government remittances) and continued use of the whole of the balances of the Government. And what would become of the very valuable recommendation of the Commission that the other banks should be compelled to keep a proportion of their reserves with the Central Institution, if that Central Institution were the Imperial Bank? Many of them will welcome the privilege of being "member Banks" with the Reserve Bank as the head of the Reserve system. It will give them increased assurance of liquidity for their resources, and will be a friend and not a competitor. But they will clearly fight to the death against a proposal to compel them to keep large balances without interest with the Imperial Bank, their competitor and rival.

Only One Way.

I see no way therefore of evading the conclusion of the Commission. The only avenue of escape from the dividend control inseparable from the present system is to accept the Commission's recommendation and set to work to establish the new Reserve Bank of India. And there is no need to feel any regret at this conclusion. Our reluctance to embark on the formidable task of creating the new institution is natural, but the prize is worth securing. For, instead of the present system, instead of a hybrid institution trying painfully to combine incompatible functions, we find that once the Reserve Bank is established India is not only endowed with a new Central Bank capable of doing immense services for the currency and monetary needs of India, but she retains in full vigour and with undiminished powers, may with increased powers of service, the old established Imperial Bank, to continue to act as pioneer in commercial banking throughout India. There is no reason why the creation of the Reserve Bank should be viewed with jealousy by the Imperial Bank or with trepidation for their dividends by its shareholders. The Reserve Bank will have to absorb the Currency Department of the Government of India and carry on the work of the currency chests all over India and Burma. But it will be unnecessary for it to open offices of its own in more than three or four places, at any rate in the initial stages of its development. A partnership profitable to India and to all concerned, can be entered into between the Reserve Bank and the Imperial Bank. The Imperial Bank can retain all the prestige of being the Government banker by entering into an agreement with the Reserve Bank to undertake Government business as agent of the Reserve Bank at all places where branches of the Reserve Bank are not established and to perform at such branches on behalf of the Reserve Bank such currency functions as are now performed on behalf of the Government. Tentative proposals for such an arrangement have been under discussion between the Government and the Managing Governors of the Imperial Bank, and I anticipate no difficulty in coming to terms satisfactory to both parties. It will naturally be a part of any such agreement that the Imperial Bank shall maintain and continue its work of developing banking facilities. In recompense for undertaking these duties, the Imperial Bank will be in a position to secure remuneration, either direct or in the form of the free use or at a low rate of interest, of a portion of the Government balances, sufficient when allowance is made for new freedom from restrictions on its dealings in exchange and in other directions, to make up to it for any loss it may incur through surrendering its present contract with the Government. Moreover, by making a new agreement now, it will be free from anxiety as to what might happen in 1931. In these circumstances I have no hesitation in making

a special appeal to India in favour of the proposed Reserve Bank. Let us not underrate the difficulties or shirk the troublesome questions in regard to detail which must arise. But let us make up our minds that we are going to have the Reserve Bank of India to take over for India the control of India's currency policy and of the machinery of credit in India, and to render services to Indian banking which only such a Bank can provide.

I have already detained you long. There are some points in the Report on which I have not had time to touch, the most important perhaps being the detailed proposal of the Commission as to the composition of the Currency Reserve. These I must leave for some other opportunity. I have tried to throw such additional light as I can on what I regard as the most important document hitherto presented to the public in the long history of Indian currency. It is a document which demands and repays study. Its merits will, I know, be recognized ever more and more as knowledge and understanding of it increase. Do not be content merely to listen to or repeat what I or others say about it. Read it and read it again, so that when finally the recommendations it contains are incorporated into legislative form and presented to the Legislature, the discussion may proceed in the light of intelligent appreciation, free from hearsay criticism or biassed controversy, and India may drain from it every drop of virtue in it, and thereby be enabled to rebuild her currency system and practice on sound and durable foundations.

Women in Industry.

By Miss Margaret Bondfield, M.P.

The imagination of women not directly in touch with the industrial world is often more easily kindled by the great political problems of the day than by the industrial problems, and yet the latter are the very foundation of our social system, and demand as great and vital an interest.

There are to-day over four million women actively engaged in industry, facing from day to day all kinds of problems, from the elementary one of the amount of wages which they are to receive at the end of the week, to the more complicated ones of their whole position and status in industry, and the function of industry within the State.

Women in Trade Unions.

Owing to the fact that the personnel of women in industry is continually changing, there are comparatively few of these four millions who are fully equipped to grapple with the solution of the problems. Many of them have not yet even learned the simple lesson that such a situation cannot be faced by individual action, but must be dealt with by corporate bodies. In 1924, only 811,000 women had learned this lesson and had joined their trade unions, and yet it will be clear to any thinking woman that the only effective opinion is that of an organized body expressing itself through properly constituted channels, and that isolated individuals, helplessly rebelling against injustice, make no useful contribution to individual peace or efficiency.

Not only is it essential that all those four millions should be alive to the necessity of having some organization through which they can maintain their standard of living, but women must be induced to be far more alive to the great part which they can play in influencing policy in the industrial world. There are few women's problems apart from the general problem, as the wages and conditions and hours of labour of women are intimately bound up with the standards of men; but in this sphere, as in every other it is essential that women should pull their full weight, and not allow themselves to be a drag on the wheels of progress.

It is the interest and keenness of its members which, in the long run, always decides the policy of the leaders of a Union. Decisions are only left to leaders when the members are apathetic, for it is the members who always have the right both to elect their leaders and to decide on their policy.

The Right to Strike.

A problem which worries a good many people in connection with the Trade Union Movement is that of the right to strike. I would say to all who find this difficulty, "What would you give to the workers in the place of the freedom to strike?" Is not the alternative practically a general conscription of labour? If people are to work under whatever conditions are laid down for them, even if those conditions are unjust and wrong, without the right to say

"We will not work until they are put right," it means that throughout industry there will be economic slavery. Remember—a strike is a form of passive resistance demonstrating a larger loyalty and is a form of protection of the weak by the strong.

When one looks round on the world of industry to-day, and realizes how many children are employed on repetition work for the first two or three years of their industrial life, and are then turned out on to the Labour market, with no qualifications for any other work, but are left to struggle as best they may amidst the general unemployment, to pick up any job for which they may or may not be fitted—when one sees the number of women who are obliged by economic circumstances to spend their days on work in which they can have no interest, in order to earn money on which to subsist—the knowledge is forced home that it is the duty of every thinking woman to apply her mind to these problems, and to see to it that women shall play their part in moulding the industrial system so that there shall be no needless waste of human life and energy.

We live in an age of organized effort, and the woman at home must help to make smoother the path of those sisters who "go out to work".

A Call for Greater Output.

By W. Howard Hazell.

If any industry or business is to succeed and to progress satisfactorily, it is essential that the leaders of the industry or the proprietors of the business should always be seeking after better methods and new ideas. The methods of manufacture in all our great industries are perpetually changing, and new processes and machines are being invented. Changes occur, and if the trade or business does not move with the times, and is left behind in the race for efficiency, the results are disastrous to all concerned.

Improved methods, higher outputs, greater efficiency bring advantages to all who are interested in production, and not to one class only. Improved methods reduce the costs, or improve the quality, and when these results are obtained, the consumer secures a cheaper or better article, the demand is increased, and Capital and Labour both get their share of the benefits due to the improved production.

Owing to the war the price of all commodities has been enhanced very greatly, and, though the increase has varied considerably in different trades, the result has been to upset markets and to restrict the demand. When the demand is reduced, unemployment is created, and workers and all engaged in industry suffer.

The great need at the present time in all industries is to find means by which the cost of production can be lowered. The most immediate and simplest way to reduce prices is to reduce wages. A better method is to reduce the costs by improving the efficiency and organization of the factories and increasing the outputs. The need for lower prices, in order to decrease unemployment, is greatest in the export trades, where the number of unemployed is highest, but a reduction in cost in any industry will ultimately assist the export industries to regain some of the trade that has been lost.

Modern industry consists, not of a series of self-contained and independent trades, but of a variety of trades which interlock and rely on each other in many ways. If the cost of transport be reduced, all industries would benefit. If iron or steel, coal or other raw material were lowered in price, the effect would be felt immediately in many of our most important industries and the prices of commodities and services be reduced, to the advantage of all connected with these industries, and to the benefit of the country.

Printing is a sheltered industry, and does not feel the full blast of foreign competition as the unsheltered industries do, but printing enters into every commercial transaction, and if the cost of printing can be reduced, all the other industries will feel the advantage. In addition, the demand for printing of all kinds—books, magazines, catalogues, advertising literature and other printed matter—would increase.

The rise or fall of 10 per cent in the price of a commodity in general use does not mean that the demand will fluctuate by 10 per cent. A variation in price to this extent usually causes a proportionate increase or decrease in the demand, much greater than the variation in the price. It is, therefore, evident that it is to the advantage of those connected with the printing trade, and all the industries of the

country, that the cost of printing should be reduced.

"Owing to our industry being sheltered from foreign competition, the wages paid have increased by a greater percentage than in most industries in the country, and the cost of printing is at present at a higher ratio to pre-war prices than that of commodities produced by the unsheltered trades.

The best method of reducing the price of printing is to increase the efficiency in every possible way. Old ideas, old methods, and old machinery should be discarded in order to replace them with new ideas, better methods, and labour-aiding machinery. If a great campaign for higher efficiency could sweep through the printing trade of this country, an enormous improvement would result; but in order that this campaign should succeed, it is essential to have the hearty co-operation and support of employers and employees. Both sides should work together to improve the output, organization, and methods in every printing office in the country. If the time taken in producing printing could be reduced, if better outputs could be obtained from the machines, and if the many little losses and waste of time and material that occur in every factory could be diminished, beneficial results would accrue to everybody. In a time of bad trade the efficient business or industry does not suffer so badly from unemployment and low profits as the ill-organized and inefficient business or industry.

It is possible that there may be some employers who believe that it is no part of the work of trade unions to consider whether machines are obsolete or worn out, and there may be trade unionists who think that the cost of the work that they help to produce is no concern of theirs. Both these attitudes are entirely wrong. Labour does suffer in various ways if machinery is obsolete and organization inefficient; and if the cost of printing is too high, labour will suffer by a reduced demand and a consequent unemployment. The printing trade is now suffering from the competition of various so-called "printing machines" which can be worked in an office by anyone, and which now do work formerly produced by printers. Their number is growing, and the only means of successfully combating this new form of competition is to so reduce the costs of job-work printing that traders will not find it to their advantage to install these special machines.

We have passed through the dangerous crisis of the General Strike, and are now emerging from the long struggle of the Coal Strike with its incalculable losses. Has not the time arrived when employers and employees should re-examine with open and unprejudiced minds the many problems which face all industries in this country? Capital and Labour in the past have not sat down to discuss how costs can be reduced without touching wages. Is not this the most vital question in all industries at the present time? The world, and particularly this country, is impoverished as a result of the Great War, and anything that can be done to reduce the cost of our commodities, to stimulate our trade, increase our exports, and find work for the army of unemployed, should be the principal object of all employers and workpeople.

The printing industry in the past has on many occasions shown to their industries new and better ways of dealing with problems which affect them all. Would it not be well for the leaders of both sides in the printing trade to realize the measurable advantages of lower costs of production; to get together and start a big campaign for greater efficiency and lower costs?

Workers' Ideals.

By Right Hon'ble Tom Shaw,

President of the International Textile Workers' Association.*

I bring to you greetings of the textile workers of other parts of the world particularly Europe. We have come here to learn exactly the conditions in this country at the instance of your comrades in the West. European workers do not see any distinction between themselves and other workers. They believe in their right to uphold human freedom and to understand the world in which they live. There is beauty, colour, and magnificence in the world, and they that have the strongest right to these things are the people that produce them, and make it possible for others to live.

With that doctrine we have come to India, not as superior men preaching to those below but as men who have themselves known the

* An Address to the Textile Workers of India.

crash and whistle of the loom and experienced the difficulties of organizing their fellow-workers. We have come to you with a message of good cheer and good hope but not to promise that things will fall into your lap as fruits.

Our preaching to you is that only through sacrifice and organization can you, as well as the workers of other countries, attain your goal. We do not come here with a cut and dry doctrine that can be put into operation immediately. In building our organization we have faced numerous difficulties, and you must do the same if your movement is to succeed and you are enabled to achieve the ideal of all the working class, which is the full liberty of every man and woman to enjoy full political freedom and a decent living.

The work for which we have come here should have begun twenty-five years ago. We have come as an example of the recognition of the European workers of their oneness with other workers. Our effort is to unite the workers of the world. We realize that between us there are deep seated differences of custom. Only education can extinguish these differences. But the economic difference between us is very small. Our problems, whether at Lancashire or Bombay, are the same. The only difference is that we have begun our organizations earlier than yourselves.

We hope our presence will be the beginning of an intensive international action that will unite the workers all over the world with the same ideas and the same aspirations, whatever their colour, creed or belief.

I and my comrades have worked at the looms and spindles. I have been a weaver for 21 years, having joined when I was ten years of age, when we had to work from 65 to 70 hours per week.

March of Economic Forces.

There are certain things in the world at a standstill, but there is no such thing in industry. There is no power on earth strong enough to impede the march of economic force. Experience shows that the march could not be stopped in England or in India. In England also the weavers prevented the growth of machinery and broke up looms. They were prosecuted for trying to impede the march of industry. My advice is that you should not impede the march of industry but take it into your own hands, for that is the only way for workers to achieve economic salvation.

It could only be achieved by people well-educated, with strong common sense and balanced judgment, people who knew what they wanted and were determined to have it. At the beginning of our movement also had but a few men in the organization, but now, in spite of unemployment lasting for five years, we carry with it nearly every man who works in the textile industry.

The final work of our redemption could be done only by yourselves. You should bring pressure on Government and on employers, insisting on a decent education and a reasonable livelihood.

We have a great deal and noble mission to perform. We have to see that poverty, dirt, disease and degradation are driven out of the world. No man in India or Europe can set his hand to a greater work than the elimination of these from the world. All these can be eliminated and we ask you to help us in the work of making the world brighter and happier for us to live in.

University Ideals.

By Syed Sultan Ahmad,

Vice-Chancellor, Patna University.*

Does our University education educate? The answer to this can only be given if we find out, firstly, the use and functions of a man and his business in life, and secondly, the functions of a University. The Spartan King Agesilaus on being asked what should the boys be taught replied, "Teach them to be men". Ruskin says that man's use and functions are to be the witness of the glory of God and to advance that glory by his reasonable obedience and resultant happiness and he further dilates upon man's business in life as follows :—

"Man's proper business in this world falls mainly into three divisions: Firstly, to know themselves and the existing state of the things they have to do with. Secondly, to be happy in themselves and in the existing state of things. Thirdly, to mend themselves and the existing state of things as far as they are either marred or are mendable." Who can deny the truth of these observations?

* Part of Convocation Address delivered before the Aligarh Muslim University, 15th November 1926.

The ultimate object of all education therefore must primarily be directed to achieve these ideals, which, in other words, must be the mental, physical and moral development of individuals, then of society, then of nation. The road is long and weary and hence the goal cannot be reached by prescribing any cut and dry formula. The process of evolution (as it always is) must be slow, but distance of time ought not to discourage us from pursuing the course best suited to attain the object in view. Different countries and different peoples have, because of their respective temperament, climate, social and political requirements, adopted different methods to secure the object in view, yet the first stage of human development is passed in surroundings which are similar all the world over, and where the relationship of teacher and the pupil is created by God, of whose glory it is the man's function to be a witness. Where can you find a more affectionate and devoted teacher than the mother and a more obedient and inquisitive pupil than the infant? But the infant stage having passed, pernicious injunctions such as "little boys should be seen and not heard" are sometimes given and the curiosity of the child is curbed. The earliest stage of man's education is the most interesting as also in a sense the most productive period of human development. Signs and not language indicate what a child should or should not do; gestures show what is right and what is wrong. Soon after, he is accustomed to words and phrases and it is then the child immediately begins to observe and enquire. This is the stage when nature itself plays its part and sets man on the path of research and if human intellect were allowed to proceed on the inertia thus given, the chief business of man's life would be the more easily performed. Here, in my conception, comes in the problem of education in all its acuteness. Different methods of education in different countries come under requisition and it is not my intention to inflict upon you a survey of the methods of education adopted at the secondary stage, more so because it is, now, happily agreed on all hands that the medium of instruction at this stage must be vernacular. Educationists all over India are now agreed on this point and no dust need now be raised over the question. Inertia imparted by nature has to be helped and not impeded by unnecessary burden upon human faculty. It is the next stage with which both you and I are at present most intimately concerned, i.e., what is ordinarily called the University stage. Let us critically examine what should be the requisites for the development of the faculties which, as I have already said, is the ultimate object of education. The God-given gift of curiosity has to be revived in even greater intensity than in the child. The student has once again to observe and enquire. His observations and his enquiries will now in due course lead him into domains at once wide and interesting. Speaking generally, he will realize that though he and his neighbours are similar elements in the composition of society, there is a divine purpose and a divine necessity that hold them together. Curiosity thus roused, and intensified gradually as his enquiries proceed, the mental faculty of the student will develop for the benefit of himself and mankind and thus would one great purpose of a University be served. Without, however, one other attribute, that of diligence, his observations and enquiries would be of little avail. Carlyle addressing the students of the Edinburgh University in 1886 said: "There is one advice I must give you. It is in fact the summary of all advices and you have heard a thousand times, I dare say; but I must nevertheless give it the thousand and first time; for it is most intensely true, whether you will believe it at present or not, namely, that above all things the interest of your own life depends upon being 'diligent now, while it is called to-day, in this place where you have come to get educated'. Diligent that includes all virtues in it that a student can have. By diligence I mean among other things and very chiefly honesty in all your enquiries into what you are about." With observation, enquiry and diligence, mental development of a student is assured and thereby is also the advancement of human kind.

Let us now examine whether the present system of University education in this country has adequately served to advance the attributes necessary to turn boys into men, physically strong, morally fit and intellectually alert. There is much diversity of expert opinion in this country as to whether the present system of University education has been a success or not. It is not my purpose to deal critically with the different views, nor is it appropriate that I should on such an occasion raise the controversy which may not lead to any fruitful purpose. My deliberate opinion, however, is that Universities of India—constituted as they were—have played their part well. They have performed their task which was entrusted to them with success. Their

constitution and responsibilities were suited to the conditions of the country at the time when they were created. They have turned out a number of men of whom our country is justly proud. But a few individuals excepted, I fear it has to be regretfully admitted that it cannot be claimed for the Indian Universities that they have made any deep impression on the physical and moral development of young India as a whole though they may have influenced to a large extent the development of student's mental faculties. Compare the morale, *esprit de corps*, and sturdy patriotism of the students at the European and American Universities, with those of our own Universities and it will be obvious that the latter with one or two exceptions cannot even claim to have attempted to develop the student's moral or physical faculties. Their function has been to aim more at diffusion than depth or thoroughness of knowledge. But this would be inevitable in the earlier stages of University education in any country. I don't despise the form of education which gave us an army of lawyers, or officers in various departments of State. But if fitness for Government employment or for the Bar is not the exclusive aim of public instruction, then it is time we cried "Halt", and aimed at higher and truer ideals than we have hitherto done. It will be, I hope, readily admitted that the existence of new and economic social conditions require complete revising of their programme both in the graduate and post-graduate stages. Defects have been discovered in the old system which call for immediate removal. A searching enquiry must at once be undertaken to get rid of the evils which have been found out in the system. It is not very easy to formulate even a few of what have been considered as serious failings in the present system by men of recognized authority on educational matters. But I shall try and very briefly refer to a few topics of immediate interest and importance affecting University education in this country.

Medium of Instruction.

The first question that has been agitating the minds of the educationists of India to-day is the question of medium of instruction. I have already stated that there is an overwhelming unanimity of opinion on this point upto the secondary stage. Different considerations, however, come in when we deal with the question affecting the University education. I am one of those who think that the introduction of vernacular as the medium of instruction at the University stage will be politically suicidal, educationally impractical, and it will be distinctly a retrograde step and will greatly hamper the advance of scientific studies in India. As an abstract question, there can be only one answer and that in favour of the adoption of vernacular as the medium of instruction. But the variety of vernaculars in this country, want of sufficient number of scientific literature in vernaculars and the total exclusion of vernacular as Court language in most of the provinces of India are some of the insuperable practical difficulties in the way of adoption of vernacular as medium of instruction in the Universities of India. The success of the experiment at the Osmania University is a matter for general congratulation. But the existence of Urdu as Court language throughout His Exalted Highness the Nizam's dominions obviates many of the difficulties which present themselves to us in British India. Nor, frankly speaking, I am on merits satisfied that under present conditions of British connection with India, it would be a wise step to substitute vernacular for English as the medium of instruction at the higher stages of education. On the other hand, I deeply feel that our legitimate demand for self-government within the British Empire and our reasonable cry for recognition of our status as a partner in the British Commonwealth and our increasing business dealings with the West enhance and accentuate the necessity of strengthening our knowledge of the English language.

Specialization.

I may now be permitted to make reference to what I regard two grave defects in our system which are, in my opinion, eating into the vitals of our student community which cram their mental faculties and stunt their capacity for original research. The first is the utter disregard for specialization by particular colleges or Universities in particular subjects most suited to local requirements, with the result that efficiency is sacrificed at the altar of variety. Every college and every University takes upon itself the task of teaching all conceivable subjects with the obvious result that no subject is taught with the perfection which it deserves. The responsibility of this unfortunate result rests neither on the teacher nor on the pupil, but solely and wholly upon the system which has succumbed to the clamour of a class of people who would for ever and for all times insist on each college or University to turn out, as factories, a certain percentage of products, in reality unfinished

and ill-equipped, but nominally and under false pretences, claiming to be treated as finished and polished articles.

It must also be conceded that the true and higher functions of a University are to make arrangements, provide facilities for original research, and to make provision for investigation of truth by men who in the spirit of missionaries, devote themselves to it, unharassed by anxiety, for means of livelihood or for the rainy day. As the late Sir Ashutosh Mukherji observed 20 years ago, "that unless a University can show a substantial amount of research produced by the aggregate of its professors and pupils and unless it can show that it has trained a substantial number of able and willing workers to carry on research in the different branches of knowledge, the University can hardly be regarded as approaching the realization of the true academic ideal." Happily, signs are now visible of attempts being made by some of the Universities of India to stimulate post-graduate research on scientific lines. In my view specialization at this stage also in particular subjects by a particular University or by a particular college in a University will be conducive to better results as also be more economical than if all the colleges under a University or all the Universities took up all subjects for post-graduate work. In a country like ours where the resources for advancement of knowledge are as yet not easily available—private benefactions are yet slow to come—and the wherewithals are mostly derived from the State, it is in the highest degree desirable that efforts be made in the direction of bringing about co-operation between the different Universities, pooling their resources together, and the work of research being carried on in an organized and systematic manner at suitable centres

Vocational Education.

The next vital question for immediate solution is the introduction of vocational education both in schools and Universities. There seems to be such a consensus of authoritative opinion in its favour that it will be waste of energy to advance arguments in support of it. I really apprehended that if immediate arrangements are not made for such education, a situation will arise and that in no distant future, which will at once be embarrassing to the administration, and demoralising to society. An acute unemployment problem the like of which India has never faced before arises which will shake the very foundation of our social fabric. There is a limit to employment by the State and there is also, I hope, a limit to the credulity and the failings of humanity upon which the Bar prospers. That being so safety valves have immediately to be provided for. If this is not done, India must be prepared for a larger number of devotees to Schopenhauer's theory of suicide and for a band of ill-fed, discontented groups of graduates, with black banners parading the streets or spreading disaffection in the country and thus becoming a source of great menace both to Government and to society.

I cannot leave the topic of vocational education without referring to a few relevant passages from a remarkable speech said to have been made by a man who had never made one before, originally published by Mr. Alexander Irvine, the author of "My Lady of the Chimney Corner" in the "Teacher World" and subsequently reproduced in "Public Opinion" in its issue of December 21, 1920 and again by special request in its issue of July 2, 1926. The speech was made after dinner at one of the world's greatest hotels and affords plenty of food for reflection. He said: "We are in one of the famous banqueting halls of the world. Belshazzar's hall compared to this was a lodging on the third floor back. No such art existed in those days as we see around this room. No such viands graced his board. What there was, that was elegant for that day, but we live in another age, an age of art, art craftsmanship and luxury From the four corners of the earth came the things on this table. We have around us samples of at least a hundred forms of human work. Take this table cloth, to begin with. It is of most exquisite workmanship. It is a damask linen, beautiful and most pleasing to the eye. I want to ask you a question: Is there any one here who knows from personal experience anything about the labour involved? Let me draw your attention to the samples of pottery here. Surely the men and who produced such beautiful things are artists. What a joy it must be for a man to hold such a thing in his hand—complete—and say, "I made it". There are samples of the most exquisite and, I know, costly cut glass. I would be rather surprised to find a man among you who had ever touched this industry at any angle." When he had gone over most of the things in the room in this way he turned again to the table and continued "I am a representative University man, seriously asking myself and

you whether the system we call education educates? Here we are, then, a group of men on whom a University has set its stamp. We produce nothing we eat, we could not even lend a hand in the making of anything we see around us and truth compels me to venture the suggestion that in ninety-nine cases out of a hundred the chief motive of a college education is to escape actual participation in just such work as gives or ought to give joy to the worker. Education is to prepare and equip for the duties and responsibilities of life, not to turn out industrial and commercial bosses, gaffers, timekeepers, and cash registers. I would hardly be justified in taking up your time with those observations alone. So, in addition, I want to say this: most of you are destined to be masters of men. You will organize and mobilize their labour, you will oversee it. When you see men around you actually creating beautiful things with their hands, I would like you to remember that it was my opinion that actual labour in the arts and crafts and industries is an infinitely nobler contribution to the happiness of mankind than clipping coupons and living on the sweat of other men's brows. Why should a University perpetuate such a revolt against Nature in which the man who does no useful work at all, is considered a gentleman, and the creator of wealth and beautiful things should be considered low caste, in Anglo-Saxon civilization?" He pushed his chair back and stood a few feet from the table. His face betrayed deep emotion. His voice became wonderfully soft, and irresistingly appealing. The college men had been interested; they were now spell-bound. He raised his hand and went through the motions of drawing aside a curtain. 'Gentlemen', he said, 'may I introduce to you a young Galilean who is a master builder—Jesus of Nazareth!' It was a weird act. The silence became oppressive. As if addressing an actual person of flesh and blood, he continued "Master, may I ask you as I asked the young men, whether there is anything in this room that you could make with your hands as other men make them?" There was a pause, a brief moment or two, then with slow measured stride of an Oriental he went to the end of the table, and took the table-cloth in his hand, and made bare the corner, and carved oakleg of the great table. In that position he looked into the faces of the men and said "The Master says 'yes,' I could make the table—I am a Carpenter!"

It is a long quotation, but I feel I need not apologise for inflicting it upon you. I wish you to contemplate the profundity of the observations I feel convinced that the salvation of our country will be far distant if we do not learn to honour the workmen's tools at least in a similar manner as the scholar's pen or the warrior's sword.

A Plea for Toleration

Permit me to offer you my sincerest and heartiest congratulations on your success. You will now be leaving this institution and will be soon thrown into the outer world and will have to face complex problems in life. You have just been charged by your Vice-Chancellor to prove yourselves worthy of the trust that has been reposed in you. This embraces all that one could tell you on such an occasion. How you should prove yourselves worthy of this charge, will arise every day in your life. Indeed speaking for myself, when I look upon the bitterness with which communal strife has been carried on in India within the last few years, any advice that I should like to give you on this occasion, will be relevant only to this question. Please remember that there are other people in this world besides yourselves and that they have got as much right to live in it as you have. They are made of the same flesh and blood as you are; you and they make obeisance to the same Creator. You and they may not agree on various points, but this cannot justify you to despise each other as contempt implies a triumph over and pleasure in the ill of another. I would enjoin upon you in all sincerity to be true to your God and in the high traditions of your Alma Mater and to follow the dictates of your conscience. You will then be free from bigotry and will avoid everything which may lead to exclusiveness and narrow-mindedness. Do not begin to quarrel with the world too soon as after all is this the best that we have to live in. Look around and see what is being done by some of our people in India and that in the name of religion! What a sacrilege! It seems incredible and inconceivable that man could become a beast and that so openly, and defiantly and then turn to religion to support his action. I would beg of you that when you go out to the world you will set your face against such atrocity, mercilessly pursuing one who may be trying to divide you from your other fellow-countrymen. Put your foot down on any attempt to create bad blood between followers of different religions. Keep in mind the well-known saying of the sage of Aligarh whose spirit must be with us to-day, to wish you

godspeed on your new career, that the Hindus and Muhammadans of this country are like the two bright eyes of a damsel, and if you hurt one your disfigure the other. In gratitude to Him for all the good that you have received from this institution go out to the world, and preach and practise the doctrine of love and toleration amongst your countrymen. Aligarh more than any other University in India has created and nurtured a tradition of uprightness, independence and catholicity of thought. It falls to your lot to be the torch-bearers in the encircling gloom.

Co-operation in Bombay.

The co-operative movement made steady progress in almost every branch in a year which was generally possible for its development apart from the low prices of the two important money crops, cotton and sugarcane. This circumstance affected the recovery of loans to some extent more especially in the case of the Canal Societies where the reduction of heavy arrears depends largely on the sale of gur. The total number of societies rose from 4,126 to 4,656, 590 new societies being registered and 60 cancelled. The figure of overdues was 14.2 per cent.

In the case of Agricultural Credit Societies the policy of improvement and consolidation rather than one of expansion by active propaganda has been maintained. Spontaneous growth is encouraged in richer districts and where the crops are more assured, while it is very carefully controlled in famine tracts and poorer areas. While Dharwar heads the list as before, there has been a striking increase during the year in East and West Khandesh and in Sind. Progress has been made towards securing more regular provision of finance by the introduction to a greater extent of the system of normal credit statements. This is reflected to some extent in the striking increase in the Working Capital. An improvement in Supervision was secured by portioning out some of the worst societies amongst the honorary workers, and by the development of Supervising Unions, of which there are now 87 as compared with 73 in the former year.

The total number of Agricultural Credit Societies increased from 3,377 to 3,868, their members from 2,43,000 to 2,71,000 and their Working Capital showed the striking increase of 26 per cent from 249 to 314 lakhs. 463 were classed as A, 3041 as B, 467 as C and 142 as D. The best record in this respect was shown by East Khandesh and the worst in Poona and Satara. The state of some of the societies in Poona is by no means satisfactory. The Bhil Societies in the Panch Mahals again showed distinct improvement. Out of the total takavi grant of 3½ lakhs placed at the disposal of the Provincial Bank for land improvement, a sum of Rs. 2,09,570 was actually utilized.

Agricultural Non-Credit Societies increased from 223 to 253. As in the previous year chief interest centred in the Sale Societies of which there were 31 at the end of the year, and of these the Cotton Sale Societies commanded chief attention. The latter societies sold 62½ lakhs worth of cotton compared with 16 lakhs during the previous year. The most important event was the boycott of the Gadag Society by the local Dalals, which was undoubtedly due to the increasing business of the Society, and still continues. Only one bidder attended the auction but in spite of this the amount of cotton sold showed an increase. In order to secure the sympathy of the millowners and exporters of Bombay, and to find a way out of the boycott, a Conference of representative buyers and exporters was convened there. It was decided that the Society should sell only the improved varieties by auction and only the cotton of the members, and that under these conditions it would receive the support of the Bombay trade. It has acted up to the conditions but so far no support has been received from Bombay. In Gujarat the Cotton Sale Societies progressed except in Jambusar Taluka of Broach where a District Honorary Organizer had to be prosecuted. The Society for the sale of gur did well as did the shop of the Yellur Union in Satara District, which sells agricultural produce in general and has its headquarters at Kolhapur. Other Sale Societies in the Presidency worth noticing were the Arecanut Sale Society at Kumta in Kanara, the Byadgi Chilly Sale Society in Dharwar. In Sind the shop at Shikarpur and the Malir Society, which sells potatoes and vegetables, had a good year.

The number of machinery and implement societies at the end of the year was 69. Of those which utilize machinery driven by power the power pump society at Anklav in Kaira

District did good work, and the Kareli ginning society in Broach District had a successful year. A new ginning society was started at Nandgaon in Nasik District. The number of manure societies was 17. They sold manure worth Rs. 55,000 of which the two societies at Manjri and Hadapsar sold Rs. 30,000 worth. The work of individual societies is small when compared with that done by the Provincial Bank which sold manure of the value of Rs. 8¼ lakhs in the Canal tracts. There were 18 Cattle Breeding Societies of which only those at Shidenur and Alur in Dharwar District deserve notice. As regards joint improvement the two Dam Societies at Mutta and Sanikatta in Kanara did well, and at Yelvigi in Dharwar District a newly formed society of Waddars has brought 160 acres of land under cultivation.

The development of co-operative activities in urban areas by the institution of People's Banks has received special attention in this Province. The policy is to have at least one such bank in every Taluka headquarters. This aim is near realization in parts of the Southern Division, although it must be admitted that the banks have reached very different stages of development in the different Talukas.

The total of non-agricultural credit societies was 476 at the end of the year compared with 448 in the previous year, and of these 47 are urban banks with a working capital of over Rs. 50,000. Urban societies may be divided into four classes, (*i*) Those which serve the needs of the small artisans and traders, (*ii*) Societies of salary earners of Government Offices, Departments, Railway Companies, mill-hands, etc., (*iii*) Big urban banks which cater for the needs of all classes and not only for the artisans and traders, (*iv*) Miscellaneous, such as urban thrift and educational Societies and Societies for depressed classes.

There has been considerable development in the working of the District Central Bank during the year. The number decreased by one from 20 to 19 as the Thana Bank, which did not function during the year, was amalgamated with the Bombay Provincial Bank. The total Working Capital increased from 141 to 178 lakhs. The expansion in the financing of primary societies by District Banks is shown by the figures of loans which were Rs. 127 lakhs compared with Rs. 100, 75, and 48 in the three previous years. Several banks increased their staff or improved their efficiency during the year, and this is demonstrated by a total increase of 33 per cent in the expenses of management. Nevertheless improvement in this line is still one of the great needs of the Co-operative Movement. Several of the District Banks opened branches at Taluka towns.

As regards Provincial Co-operative Bank, the year was, as usual, one of sound progress and advance. Noticeable features were: a new issue of shares, the majority of which were taken up by Societies; greater representation given on the Board to Central Banks and Primary Societies; increase in Working Capital by 33 per cent; expansion in fluid resources; the opening of two new branches at Kalol in Panch Mahals and Shirpur in West Khandesh; and in conjunction with the Provincial Bank of Bihar and Orissa the convention of an All-India Provincial Banks' Conference at Bombay. The Bank set a noticeable example by reducing its rate of interest on deposits and thus being able to reduce the rate of interest to societies from 7½ to 7 per cent. The reduction of rates of interest in Co-operative Banks in order to conform to the general reduction in the market is a matter which those responsible for the management will have to consider. The Bank sold gul to the value of 13¼ lakhs, manure to the value of 7 lakhs, and 439 implements in its various shops. It also distributed cotton and groundnut seed to the value of Rs. 86,000.

The Consumers' Movement remained stationary, and the Producers' Movement showed no progress. The latter is affected by the fluctuations in the prices of raw material and the slackness in demand. The Weavers' Movement too remained more or less stationary. The number of societies was reduced from 69 to 60, but on the other hand some of the societies in the Southern Division showed some development as did the Karkamb Society and the Sholapur Urban Society in the Central Division.

The number of Housing Societies increased by 1 to 44, of which 22 are in Bombay City. The same difficulties due to slump in trade and decreased rents which were noticed during the previous year continued to operate in the case of the societies in Bombay City. Good progress was made during the year in Karachi where the Patsi Society has constructed several tenements, and four other societies are about to begin work. In Dharwar the Saraswat Society has completed 32 out of 46 buildings and the Raddi Society its full amount of 12 buildings. In Ahmedabad after considerable efforts the Brâhma Kshatriya Society was registered, and with commendable promptitude acquired an area of 16 acres, collected capital of nearly a lakh and obtained sanction for a Government loan of Rs. 3½ lakhs. It

has begun to build and its example has resulted in the registration of a Parsi Building Society.

The two most important points in connection with the Bombay Central Co-operative Institute were its legal recognition in the new Act, and a change in its constitution. By the latter it has been brought more in touch with similar organizations in other parts of the world, and its management has become more democratic. Provision has been made for District branches, which have been opened everywhere except in parts of Sind. More than 30 conferences were organized under the auspices of the Institute during the year, and 18 regular training classes, while 48 short classes for Managing Committee members were held. This year the Provincial Conference was held in Dharwar, which is the first occasion on which it has been held outside Bombay or Poona. Special mention may be made of the All-India Conference of Registrars held at Bombay during the year.

India's Economic Greatness.

By J. E. Woolacott.

A description of the greatest of the irrigation works now under construction in India, the Lloyd (Sukkur) Barrage and Canals Project, contains the arresting statement that while the whole area of Egypt comprises 8,460,000 acres, with an actual cultivation of 5,400,000 acres, the Indian project will provide for an annual irrigation of 5,900,000 acres in a total commanded area of 8,132,000 acres. It is, indeed, impossible for anyone who has not actually visited India to visualize its enormous extent and its almost unlimited economic possibilities. And it is to be feared that in the visions of some ardent believers in the future of the British Empire, India finds no place. Yet India to-day is the greatest market in the world for the manufactures of Great Britain. A country which in a single year absorbs British goods to the value of £90,000,000 is a factor of the greatest importance in the Empire's well-being. But in the many discussions that have arisen regarding the prospects of British commerce and the imperative need for developing markets for British manufactures, how seldom it is that the importance of India finds the recognition it deserves. Nor is it adequately appreciated that to-day the purchases of British merchandise by the Indian people comprise more than half their total purchases from abroad.

Great Britain's proportionate share in this commerce has declined substantially since the period before the War. The pre-war average was 63 per cent; by 1924-25 the figures had fallen to 54 per cent. Meanwhile, our competitors have not failed to realize the potentialities of the Indian markets. American manufacturers, in particular, are making strenuous efforts to increase their business with India, and the United States possess in that country a staff of government servants who vigilantly watch the interests of the American trader and despatch constantly to Washington information which may help American merchants and manufacturers to extend their operations. It is certain, then, that the British exporter will, in the future, have to face keener opposition in the Indian market than, perhaps, he realizes to-day. Self-interest, apart from the higher considerations of the Empire, therefore, demand that there should be in this country a greater knowledge of India, her peoples, and her vast economic potentialities.

The individual purchasing power of the people of India is admittedly small. But it is undoubtedly increasing, and, where 320,000,000 human beings are involved, a very small annual increase per head means in the aggregate an enormous sum of money. A simple arithmetical calculation shows that an advance of only a shilling represents a total amount of £16,000,000, and unless present indications are to be belied by events the material prosperity of the Indian masses should experience substantial progress in the not distant future. When it was decided to appoint a Royal Commission on Indian Agriculture the only criticism of the decision that had any real substance was to the effect that the Government of India had already at its command the services of skilled scientific agriculturists who could provide it with all the necessary advice to carry out the purpose it had in view. Still, it must be admitted that the recommendations of a Royal Commission should supply a driving power of undoubted value and facilitate the provision of the funds necessary to give a widespread stimulus to agricultural improvement. The results already secured by the Imperial Agricultural Institute at Pusa and the Provincial Departments of Agriculture, limited though their financial resources have hitherto been, open up a bright

vista of hope for India. The Pusa Institute, which owed its inception to the keen vision of Lord Curzon, has done magnificent work. In his report for 1924, Dr. Clouston, who is head of the Institute and Agricultural Adviser to the Government of India, remarked that there were then 5,000,000 acres of land under improved varieties of seeds produced by agricultural scientists, and that these varieties were yielding an increased profit of Rs.10 (15*sh*) per acre to the cultivator. Considering that there are 260,000,000 acres of cultivable land in India, it is not difficult to realize the enormous possibilities that lie in the application of science to the soil.

But the evolution of improved varieties of seeds constitutes only one of the many activities at Pusa and of the Provincial Departments of Agriculture. The problem of providing improved breeds of milch cows and of draught cattle is being dealt with successfully; the ravages of insect pests are being scientifically combated; the introduction of more effective agricultural implements is being encouraged; and a host of other valuable functions are being performed. The addition to the wealth of India which may result from the improvement in the breed of cattle is almost unlimited. While the average yield of milk of the Indian cow during the lactation period is 800 lbs., a Punjab type produced at Pusa yields 4,000 lbs. Another type has given as much as 12,000 lbs. during the period of lactation. Concurrently, the Institute is devoting its attention to the evolution of draught cattle to supersede the weak animals generally used in Indian agriculture to-day. The success which is being achieved in this direction will facilitate the use of improved agricultural implements, and thus add materially to the value of the Indian harvests.

It is obvious that if the labours of the Royal Commission should lead to a great increase in the volume of this work, a rise in the standard of living of the agricultural masses will inevitably follow.

The marvels which irrigation have worked in India constitute a record of which British engineers and administrators have a right to be proud. But the full tale has yet to be told. The completion of the Sukkur Barrage and Canals Project will, as has already been stated, provide water for 5,900,000 acres annually. Another great scheme, the Sutlej Valley Project, includes an area of 5,108,000 acres, or nearly 8,000 square miles. A third, the Sarda Scheme, in the United Provinces, is intended to give irrigation annually to an area of 1,713,000 acres.

The extensions which are being made at the leading ports of India bear forcible testimony to the growth of the sea-borne trade of the country. No one who is familiar with the masterly reports of Mr. Thomas Ainscough, His Majesty's Senior Trade Commissioner for India and Ceylon, can fail to have been struck by the significance of these works. At the great port of Calcutta and at Karachi notable extensions are in progress; the Government of India has decided to construct two new deep water ports at Cochin and Tuticorin; the Vizagapatam Harbour Scheme will give facilities for the shipment of enormous exports of manganese and agricultural products. The progress of Karachi pre-eminently illustrates the results of agricultural development. The value of the commerce passing through this port has risen in 35 years from 1,026 lakhs of rupees to 7,087 lakhs, and Mr. Ainscough's prediction as to the future of Karachi is marked by well-founded optimism. "I regard it as absolutely certain," writes the Trade Commissioner, "that within the next twenty years or so the Port of Karachi will have developed beyond all expectations. The irrigation experts anticipate that the Sukkur Barrage Scheme alone will contribute an extra million tons of exports in the shape of wheat, cotton and oil-seeds, while the Sutlej Valley project is likely to contribute an equal quantity from the Punjab."

It is beyond question that the economic importance of the Indian Empire would be more fully realized in this country if the Government of India followed the example of the great self-governing Dominions and established in a central position an "India House" in London, in which the High Commissioner and the Trade Commissioner could be located and facilities given for the display in a suitable manner of India's varied and valuable products. The present offices in Grosvenor Gardens are remote and inadequate, and the remarks on this subject contained in the able Report of Mr. H.A.F. Lindsay, the Indian Trade Commissioner, which was recently published, deserve the immediate attention of his Government.

It is noteworthy that Sir Atul Chatterjee records his entire concurrence with Mr. Lindsay's view, that in Great Britain and on the Continent active measures should be

adopted for promoting a wider and more intimate knowledge of Indian produce and manufactures. Sir Atul fears that unless an early advance is made in this direction, Indian interests will be seriously prejudiced by the competition of rival products from other countries.*

* With acknowledgments to the *United Empire*.

Economics in the West.

Results of Unpegging German Exchange.

London, October 1st, 1926.- Important steps are not always heralded by earsplitting trumpet blasts. They are sometimes taken silently and, to speak in paradox, by the mere fact of standing still. Of such a nature was the so-called unpegging of the German exchange. With scarcely any widespread public anticipation, the German mark, merely by the attitude of the Reichsbank in respect of propositions formerly automatically accepted, suddenly became free to move in a way it had never known since its post-war resurrection.

For the greater part of two years past the Reichsbank had held itself ready to buy or sell dollars at the fixed rate of 4·20 marks per dollar, thus maintaining the exchange at parity with United States currency, that is with gold. The result was that changes in the value of dollars in terms of sterling, for example, were faithfully reflected in the sterling quotation for marks. As dollars appreciated, so did marks. As sterling became dearer in terms of dollars, so it did also in terms of marks.

The Reichsbank however was under no legal obligation to act in this manner, and on August 23 it ceased to do so. From current reports it appears that one of the Berlin banks in need of marks presented dollars at the Reichsbank for conversion at the usual rate, and that the central institution, already well supplied with exchange, refrained from purchasing the dollars on these terms. By this simple act it became clear that marks were henceforth to be allowed to find their own level of value in terms of foreign currencies. The immediate effect was a slight cheapening of dollars for disposal in Berlin. The mark rose to a small premium in New York and increased its premium over sterling.

Several important results follow from this development, but to begin with it is well to recall the principal provisions of the monetary reconstruction scheme as far as they concerned currency technique. The Bank Act of August 1924 laid upon the Reichsbank the obligation to redeem its notes on demand by the bearer in German gold coins, of which there are none at present in circulation, gold bars of not less than 1,000 marks and not more than 35,000 marks in value, or cheques or orders to pay on specified foreign banks calculated at the gold value of the currencies concerned. The choice between these media of redemption was to rest with the Bank. This part of the law however was not to become immediately operative. Even now it is not in force, and it cannot become so until a joint decision to that effect has been taken by the Direktorium and the General Council.

It is quite wrong, therefore, to suppose that the unpegging of the exchange immediately and automatically reinstates the gold standard, or anything closely resembling it. Even when the pertinent section of the law becomes operative Germany will be on a gold exchange standard, as distinct from a gold standard, unless the Reichsbank clearly demonstrates over a period of time an intention of disregarding its right to redeem notes in exchange rather than gold. At present the German system may be described as a managed currency directed by exchange movements, though should the Reichsbank impose on itself in practice the unlimited sale of exchange at or near the gold export point, a gold exchange standard will as a fact be in force. It may be assumed that for the time being this is what will happen, though further important developments are anticipated at no far distant date.

The abandonment of the fixed parity with the dollar means as a first consequence that the mark will be free to fluctuate in terms of other currencies independently of changes in the exchange value of United States currency.

It will be recalled that Great Britain, together with Holland and other countries, returned to the gold standard at the end of April 1925. Consequently from that date it is illuminating to compare the fluctuations in dollars and florins, both gold standard currencies, in terms of sterling. Although the general trend was roughly parallel, the unmistakable fact is that there was nothing like the close correspondence between dollars and florins, although on a common monetary basis, that is noticeable between dollars and marks.

The somewhat artificial link between dollars and marks was much more rigid than that provided by the operation of the gold standard in two far distant countries. The inference is that the close parallelism between the dollar and the mark will tend to disappear, being supplanted by independence of movement within the limits of approximate community of monetary standards.

Exchange Fluctuations and Gold Movements.

The question of the possible limits in the immediate future to fluctuations in German exchange cannot be answered dogmatically, first because the policy of the Reichsbank in this regard has not yet been made clear, and secondly because conditions and costs of gold transfers are vastly different from those current just before the war. To mention only two items, aerial transport has won for itself an important place in the determination of gold points between European currencies, while nowadays many central banks do not insist on the gold they purchase being transported to their own doors, but regard gold deposited in London or New York as equivalent to metal stored in their own vaults. Consequently until experience has been gained from a substantial number of actual operations it is impossible to state precisely where the gold points between Britain and Germany stand. All that can be said is that working on the information available it would appear profitable to export gold from London to Berlin when the exchange reaches about 20.381 marks to the pound, or about 2 per mille below the practical, as opposed to the theoretical, par of exchange. The point at which gold would tend to flow out of Germany cannot be estimated with equal precision, but it should be noted that if the Reichsbank chose to accept gold earmarked in the Bank of England rather than insist on its physical removal to Berlin, the gold point mentioned would be very much nearer parity and exchange fluctuations would be confined within narrower limits.

It is not to be assumed that for the time being there will be any close agreement between gold movements into and out of Germany and variations in the value of the mark. For reasons already explained, gold is not likely to flow out, even should the mark cheapen to the supposed gold export point. On the other hand, gold may quite well flow into Germany without the gold import point being reached or even approached. Indeed, it is quite conceivable that the mark might stand at the point where it became cheaper in theory to export gold than to buy exchange, and yet gold might still flow in. The Reichsbank has substantial gold deposits abroad, which it augments by conversion of exchange balances, and occasionally it takes steps to bring these home to Berlin to strengthen the metallic stocks in its own vaults. Just recently, for example, after a period of 4½ months of stability in the amount of its gold held abroad, the Reichsbank reduced the figure by removals to Germany from 260 millions to 198 millions, that is by roughly three millions sterling, within a fortnight. But such movements are merely evidence of Reichsbank policy and are not to be taken as unfailingly indicative of a substantial appreciation in the dollar value of marks. They are special transactions which may continue to occur until the management of the Reichsbank is thoroughly satisfied as to the adequacy and convenience of the stock of gold accumulated in its own coffers.

Effects on Credit and Currency. Technique.

The removal of the pin which securely fastened the mark to the dollar has important consequences in the methods by which currency requirements are met. By reason of long-standing business and personal customs, currency and credit conditions in Germany are regularly marked by a strong demand for cash at the month-end, and a distinct change has now taken place in the method of coping with this regular need. So long as the Reichsbank bought and sold dollars freely at the fixed rate of 4·20 the banks met their month-end cash requirements largely by selling exchange to the Reichsbank, well aware that they could buy it back at the same price as soon as the pressure had passed. The process cost them nothing more than the loss of interest in the interim period on the amount of exchange sold. So soon as the mark was free to fluctuate, however, an element of risk was introduced and the procedure became less attractive. The result is that temporary sales of exchange have to a considerable extent been superseded by the rediscounting of bills, a generally more costly procedure. What this means is that the Reichsbank is now in a position to exercise through its charges for accommodation more effective control over the credit and currency situation. The discounting of bills is of the very essence of modern banking technique, and the strengthening of the bank rate weapon through the greater reliance on discounts for the provision of cash

gives the Reichsbank a larger measure of control over rates in the money market and therefore over the supply of credit than it could have while the banks found it possible to add to their cash resources at little cost and no risk to themselves.

Work of the Transfer Committee.

But in addition to its domestic effects, the mark's new freedom of movement has important implications in the field of international economics. It will be remembered that under the experts' reparation scheme, which has just completed its second year of operation, an international body known as the Transfer Committee, presided over by the Agent-General for Reparation Payments, was set up to regulate the pressure on the German exchange which these payments must necessarily involve and to ensure that transfers should not be effected in such volume as to imperil the stability of the mark. Up to the present this body has not been called upon to any extent to exercise its judgment as to the weight of reparation transfers on the exchange, since the mark has been effectively pegged at parity with the dollar with the aid of funds obtained by the issue of loans. The new conditions however will call into operation the full powers of the Committee as to the transfer or retention in Germany of funds acquired by the Agent-General in fulfilment of the reparation programme.

It will also be remembered that under the scheme of the Dawes Committee provision was made that if the proceeds of reparation could not be transferred from Germany without imperilling the exchange the funds should be allowed to accumulate in Germany, in the shape of short-term balances up to 2 milliards of marks and German bonds or loans up to an aggregate of 3 milliards. Should this point be reached further payments by Germany to the Agent-General must be suspended until the funds can be transferred without affecting the exchange. Consequently, if there should appear a constant and insistent tendency for the mark to lose value in terms of gold standard currencies, with resultant frequent demands on the Reichsbank to furnish gold or gold exchange for the settlement of external payments, the Transfer Committee might then be called upon to exercise its judgment and powers to the extent of partially, if not wholly, suspending reparation receipts by the creditor countries.

The scope of the Committee's powers is thus of great potential breadth, spreading like the circular wavelets from a pebble thrown into the water, to bring about possible budgetary disturbances in various countries and economic effects in widely diverse areas. For example, the possibility of reducing the British sugar duty or having to find a new source of revenue is a matter which, though superficially far removed from the fluctuations in German exchange, might be vitally affected by a persistent tendency on the part of the mark to seek lower levels of external value.

Reparation Remittances.

It becomes most important, therefore, to discover how the programme of reparation payments in the first two years of the current scheme has been fulfilled, and to do this some investigation must be made of Germany's balance of payments over the period. During the two years mentioned Germany has remitted to external creditors on account of reparation, including service of the international loan, roughly 1¾ milliards of marks. Nearly two-thirds of this sum is made up of deliveries in kind, while over 400 millions have been collected by France and Britain under their respective reparation recovery acts. There is no distinction in essence between these forms of payment and transfers through the ordinary channels of the exchange market. Deliveries in kind merely mean that goods flow out of the country and give no right to a corresponding inflow. Germany has to give the rest of the world something for nothing. Again, when under the old mechanism of the Reparation Recovery Act the British Government received from the British importer part of the purchase price of goods supplied by Germany, this too meant a reduction in the external funds available for German purchases in foreign countries. Finally, if funds are remitted over the exchanges there are less foreign balances and bills available to Germany for purchases of goods and services from external sources. In the balance of payments then, all we have to consider is whether a particular item in the list of reparation payments of all kinds involves a reduction in Germany's purchasing power abroad.

From this point of view, as already noted, Germany transferred to reparation creditors 1¾ milliards of marks, in one form or another, in the course of two years to August 31 last. The question to be asked is: How was room made for this large sum in the balance of international payments? In answering the question three sets of items may be distinguished: first, claims arising from current movements of merchandise and precious metals;

second, those in respect of current services, in the broadest possible sense, performed by or for firms and persons domiciled in Germany for or by clients in other countries; thirdly, changes of nationality in the ownership of capital, whether by external borrowings, lendings, and repayments of loans, or by international sales and purchases of outstanding securities and balances and physical assets. In current terminology, the three classes to be considered are payments in respect of current visible, current invisible, and capital items.

THE BALANCE OF INTERNATIONAL PAYMENTS.

During the period under consideration Germany exported merchandise to the value of roughly 18 milliards of marks, while imports were valued at 22¼ milliards. Credits therefore fell short of debits on this account by 4¼ milliards, while the deficit was further increased by net imports of gold and silver amounting to over 900 millions, making the aggregate excess of debits say 5¼ milliards. The official statistics however tend towards over-valuation of imports and under-valuation of exports, and allowing for this fact and for items not included in the trade returns the figure of 5¼ milliards appreciably exaggerates the actual surplus of debits. When we come to current invisible items there is little material to go on. German shipping, though registering a marked recovery in the past few years, is still far below pre-war volume, and it cannot be supposed that any very large surplus is shown by earnings of German ships carrying exports from Germany over payments for the transportation of German imports in foreign ships. The latter item, however, according to the trade returns, is included in the value of imports, so that any international earnings on German shipping services are net. Even so they probably do not compensate for more than one-tenth of the net debits on visible trade account. Banking and insurance earnings would be negligible, as would emigrants' remittances, while the expenditure of visitors to Germany would be surpassed by that of German tourists in other countries. The most important item is undoubtedly interest. It was estimated by the second Reparation Committee, which worked alongside that presided over by General Dawes, that at the end of 1923 German capital of all kinds domiciled abroad amounted to about 6¾ milliards of marks. Subsequently, with stabilization of the mark and restoration of confidence in the local currency, the figure probably registered a substantial shrinkage. On the other hand, Germany's external indebtedness has increased rapidly, so that on all accounts, both long-term and short-term, it has probably reached a figure largely in excess of capital claims on other countries. Over the whole period interest receipts are likely to have been surpassed by interest payments in respect of German borrowings abroad. The result is that on all current invisible accounts Germany's credit surplus must have been quite small relatively to the net debits on visible trade.

CAPITAL TRANSACTIONS.

The position is therefore that Germany not only made reparation transfers of 1¾ milliards, but in addition had a balance of say 4 milliards against her on current visible and invisible accounts. This is only another way of saying that capital transactions must have been resorted to for the purpose of effecting between 5 and 6 milliards of external payments. It has already been noted that German capital abroad was estimated at 6¾ milliards at the end of 1923. A considerable proportion of the total was probably repatriated, by the sale to foreigners of external securities and other assets and by the return of foreign paper currency, before the period under examination began. Even during that time however some further realization may have taken place. A more important contribution has been made by loans raised abroad by German governments, public bodies and business institutions. The figure of long-term borrowings from the inception of the Dawes Committee's scheme to August 31 last may be put at nearly 4 milliards. This is the nominal amount, and the sum actually realized would be perhaps 10 per cent smaller on account of discounts, commissions and other deductions. Moreover, according to a report of the Agent-General, Germany has latterly made repurchases of securities placed abroad, while many recent issues merely replaced outstanding short-term debt. Even so, over the whole period the movement in the outstanding volume of short-term borrowings, if it could be estimated with any accuracy, would make a substantial addition to the net total of long-term loans. Finally, foreigners, whether as individuals or through the agency of trust companies and other financial institutions, have invested in German securities originally issued in Germany and have acquired part proprietorship in numerous private business undertakings and ownership of land and other assets. Whatever form any particular capital investment in Germany takes, however,

the various types all amount to the same thing. Germany, in order to meet current liabilities, has been running into debt to the outside world at an astonishing rate. Had the last two years been a normal period in European economics the process would have been heading straight and fast for bankruptcy. But the speed is mitigated by the fact that this has been a period of reorganization. The same fact changes the disastrous aspect of the goal to a picture of stability and prosperity, provided only that the past two years' conditions are rightly regarded as temporary and the opportunities they have furnished are seized with proper responsibility and due regard for the greatest economy in their use.

The Future of Reparation.

So far there appears to have been no very marked slowing up in Germany's overseas borrowing, and this is perhaps the least satisfactory feature of the present situation. Foreign indebtedness on long-term loans, which admittedly has to some extent replaced short-time borrowings, increased by 900 million marks on an initial total of 2,900 millions in the first six months of this year. No wonder some anxiety is felt as to Germany's capability of fulfilling the reparation plan! The programme as originally laid down has recently been slightly modified by mutual consent, but the total payments scheduled for the third and fourth annuity years are 1,500 millions and 1,750 millions respectively. Not the whole of these sums must be transferred abroad, for part of the indebtedness will be satisfied by internal payments, such as supplies to the armies of occupation. But it would probably be safe to say that the reparation plan contemplates the weighing of Germany's balance of payments on the debit side to an amount of at least 2½ milliards of marks between September 1, 1926 and August 31, 1928. Can this weight be supported?

The passage of time alone can supply the definitive answer to this question, but few words should be required to convince the most sun-blinded optimist that a seat on the Transfer Committee will be no sinecure during this period. Hitherto the mark has been pegged to the dollar; henceforth it will be a thermometer, registering, though incompletely and imperfectly, the patient's temperature. Intelligently interpreted, movements in the exchange will provide an index to the state of Germany's balance of payments, and, taken in conjunction with other figures, to the question whether Germany is currently paying her way or is living on borrowed money. In the meantime it has to be remembered that with each new borrowing abroad Germany's future liabilities on interest account are increased, and that external borrowing can only proceed to the extent that foreign countries are able and willing to lend on terms which the borrower is clearly capable of fulfilling. Finally, while it is true that large-scale borrowing is often enough essential to economic restoration through what amounts to capital re-equipment, yet the process is certainly not permissible, and is always extremely dangerous, when resorted to for purposes of meeting current liabilities. "Annual income twenty pounds, annual expenditure nineteen nineteen six, result happiness. Annual income twenty pounds, annual expenditure twenty pounds ought and six, result misery. The blossom is blighted, the leaf is withered, the god of day goes down upon the dreary scene....." Verbose perhaps, but ultimately true—as true of nations as of individuals.

Bank of France Gold Reserves.

In some countries the accumulation of hoards of yellow metal still holds irresistible attractions for central banks no less than private individuals. Evidence in support of this statement is supplied by recent legislation regarding the Bank of France and by relevant ensuing announcements. Following a recommendation of the expert committee appointed last May, a law came into force on August 7 exempting the central bank from the provisions of ten-years-old legislation forbidding the purchase of French gold coin at a premium. This in itself is important enough, for it gives official recognition to the difference between gold and paper francs and allows the Bank to make an offer for gold in hoards which stands at least some chance of acceptance by people who certainly would not exchange gold for notes at par. The new law specifically authorizes the Bank to purchase gold and foreign currencies in the market and to issue notes in corresponding amounts, such notes not to be included in the maximum issue fixed by law.

It seems improbable that the Bank has yet exercised its new powers in regard to the purchase of exchange, which is presumably confined to notes, bills and balances in gold standard currencies. About the middle of September however the Bank announced that it would shortly make public the terms on which it was prepared to buy gold. This was done on September 23, when the Bank offered as from four days later and until further notice

to purchase gold and silver coins at the rates of fr. 19.75 per fine gramme for gold and 59 centimes per fine gramme for silver. The figure for gold is equivalent to an exchange rate of roughly 145 to the £.

It is estimated that, even allowing for the mobilization of gold during the war and for illicit sales and melting, the French public still hold from one to one-and-a-half milliard francs of gold, say £50 millions, in private hoards. A substantial addition to the gold stock of the Bank is therefore hoped for from this source, and it may well be that many hoarders, rather than run the risk of an illicit sale or hold on until it is too late to seize this comparatively favourable opportunity, may sell their gold at the rate quoted. Seeing that the purchase price however is far below what would be equivalent to current exchange rates, that is, to the existing value of French notes in terms of gold, it cannot be supposed that the vast bulk of the gold will be surrendered, unless the hoarders either take the view that the franc will shortly and permanently be stabilized at a much lower figure than that now ruling, or are persuaded by some additional attractions into handing over their stocks. In addition it is thought that despite restrictions on the export of capital, French nationals hold large quantities of foreign funds acquired with the object of ensuring as far as possible against depreciation in the value of their assets. Some of these resources too it is hoped to bring in to the Bank of France to strengthen its cash reserve.

The plan is not without its accompanying dangers, for it might conceivably place the authorities in something of a quandary. While for instance an appreciation in the value of French currency is conducive to the surrender of gold in large quantities, a movement in this direction would create difficulties arising from purchases of exchange to strengthen cash reserves. If, for example, the franc should register a marked appreciation subsequent to the acquisition of large quantities of gold exchange, either the Bank or by arrangement the Government must suffer a loss through a shrinkage in the paper franc value of the newly acquired reserves. Thus a fall in the sterling rate from 175 to 150 would mean a reduction by one-seventh in the paper franc value of the foreign currencies purchased with exchange rates at their present level. On the other hand, should the franc depreciate seriously, then the surrender of gold or exchange to the central bank would be deterred. Suppose a seasoned hoarder, in a burst of patriotism, to be on the brink of handing over his gold at the present price, when the rate suddenly moves to say 200 to the £, it is obvious that he will be given seriously to pause, reconsider and probably revise his opinions as to the desirability of the course almost determined upon. It may be taken for granted that long-hoarded gold will only trickle in at first, unless some specially attractive inducement is supplied. Consequently stability is essential to engender the confidence which alone will inspire the exchange of gold for the paper currency which the Frenchman has learned so heartily to distrust. This applies equally to hoarded holdings of foreign exchange; such possessions will only be surrendered in large quantities for paper currency if complete confidence is restored in the prospects for an absence of further depreciation in the gold value of the franc.

But other serious consequences are likely to follow from the newly adopted plans, and here the greater the success of the scheme the stronger the evil results. A seller of gold, silver or exchange to the Bank will receive notes in return. He will not hoard these, as he did gold, for they possess no intrinsic value, and if he wished to hoard one or the other he would certainly prefer gold. He will most probably buy with his notes some asset of more or less stable value. The questions whether he buys land or precious stones or securities, or places his money on deposit in a bank, or whether he dissipates his savings in riotous living are however entirely immaterial to the undeniable fact that a proportion of the new currency will go straight into active circulation. The fact that the newly issued notes are backed by gold makes not one sou's worth of difference, and it is sad to see it suggested in an official memorandum that the notes issued in exchange for metal and exchanges should not be considered as tending to produce inflation since they are covered to 100 per cent by gold or its equivalent. The net outcome of the proceeding is that dormant money, in hoards or latent foreign exchange holdings, is converted into active money, in the form of currency in actual circulation. If this is not inflation, then we need drastic revisions in our economic dictionaries; in any case a rose would smell as sweet by any other name. The tendency of the purchases of gold and gold exchange themselves is undoubtedly inflationary, and to this extent they are liable to defeat their own ends by inducing conditions which might make for a

further decline in the internal purchasing power of French currency.

An additional difficulty arises in connection with redemptions. The Bank is required to withdraw from circulation the notes issued for gold or exchange acquired under this system, if and when the assets are subsequently re-sold. The practical obstacles to the withdrawal of currency once issued and the unfortunate effects of deflation are too well known to call for specific reminders.

In the face of these difficulties and objections, it may be asked, is there any good reason for making efforts of this kind to strengthen the central monetary reserves? According to the return for September 16, the Bank of France holds fr. 3,700 millions of gold in its own vaults and owns fr. 1,900 millions abroad. The greater part of the latter is deposited at the Bank of England, and under the Caillaux-Churchill agreement this gold, with the corresponding amount of debt it secures, is to form the subject of future negotiations. Presumably it will be releasable to the Bank over a period of years. If however attention be confined to the home stock alone, it will be found that the figure is lower by some fr. 400 millions than at the outbreak of war. At its face value the home gold reserve represents only 6½ per cent of the Bank's note and deposit liabilities. Obviously this is not a fair comparison, for only 25 francs in gold go to £1 whereas the latter is worth roughly 175 francs in paper. If the gold stock be revalued in the ratio of 7 francs paper to one franc gold the reserve becomes 44½ per cent of note and deposit liabilities as compared with 51½ per cent before the war. The similar ratio for the Bank of England on September 15 was 60 per cent, while that for the Reichsbank on the same date was 42½. The Bank of France ratio of 41½, moreover, is a minimum; the actual reserve, including any gold abroad which could be called upon in case of emergency, is probably appreciably higher. It would not be unreasonable to suppose that reserve holdings of this scope would be high enough for all purposes connected with the reintroduction of the gold standard, particularly if reinforced by substantial holdings of gold exchange, the assistance of which the Bank of England, for example, does not enjoy.

It would indeed appear far more important and far more effective properly to utilize the existing reserves than to attempt by methods of doubtful value to reinforce them as an antecedent step. In view of past experience and the non-existence for some time at least of the full gold standard in France, it seems that if the scheme meets with success gold will merely have been transferred from hoards in private hands to hoards in the central bank. Meanwhile the process will engender further inflation. It is open to ethical argument whether good ends justify bad means; but no one will question the proposition that a non-essential object does not justify the waste of good means, still less resort to bad ones. The lesson of French politics and economics over the last eight years is the necessity of concentrating all efforts on the construction of solid basic foundations, without regard to the decorations and ornaments which at the best of times constitute unnecessary luxuries.

Canadian Trade and Finance.

Wheat Forecasts and Estimates.

Montreal, 1st October, 1926. The world over, increased prosperity increases wheat consumption, and wheat production itself is one factor in that prosperity. When Canada produces a large wheat crop selling at a good price, the buying power of the Canadian farmer is increased. The Canadian farmer then purchases more goods from the cities and towns, the purchasing power of the industrial worker is increased, and he, in turn, buys more wheat, with the result that Canadian wheat consumption tends to be higher in years of good crops than in poor years.

Forecasts and estimates of the wheat crop in twenty-seven countries in the Northern Hemisphere producing about 85% of the world's wheat supply, indicate a total production of 2,861 million bushels for 1926, an increase of 1.2% over the production of those countries in 1925. No record crops and no crop failures have been reported, and a more normal world distribution of the crop is to be anticipated this year than in the past few years. Last year, Europe's large crop resulted in unusually small shipments to European ports, while the surplus supply was absorbed by heavy shipments to the Orient.

Since the crops of European importing countries promise to be smaller than last

year and their carry-overs are moderately low, and since larger supplies promise to be available in exporting countries as a whole, international trade in 1926-27 is likely to be somewhat larger than in 1925-26, but smaller than in the two preceding years. Steady improvement in European stability is a further factor which gives promise that Europe will continue to buy wheat in good volume. Constant study of the course of probable future demand is just as important a factor in the world wheat situation as are estimates and forecasts concerning supply.

The official estimate of Canada's current wheat crop was revised upward on September 10th to 399,008,000 bushels. Since that date, however, adverse weather conditions have prevailed in the prairie provinces, resulting in a general lowering of grades, not only of wheat, but also of coarse grains. Reports indicate, however, that the volume of production will not be seriously affected. A good portion of the wheat has been cut, but very little has been threshed.

The Grand Trunk Settlement.

Through the good offices of Mr. Reginald McKenna, Sir George May, Mr. E. R. Peacock and Mr. D. W. Berdoe-Wilkinson acting as a mediating committee, an agreement has been reached between the Canadian National Railways and the holders of the Grand Trunk Pacific 4% debenture stock. Under the terms of the agreement, the Grand Trunk Pacific stock is to be converted into an equal amount of Canadian National Railway 2% debenture stock, redeemable over a period of years by means of a cumulative 2% sinking fund, and this new stock will be unconditionally guaranteed as to principal, interest and sinking fund by the Dominion of Canada. This agreement is subject to ratification by 75% of the stockholders, the approval of the Exchequer Court of Canada and the Parliament of Canada.

In commenting on the subject, the London *Economist* says in part:

"If these sanctions are obtained, and the scheme goes through, there will be removed a long-standing cause of irritation and bad feeling between the British investing public on the one hand, and the Canadian government on the other, which has tended to tarnish the repute of Canadian securities on this side.

"The terms of the scheme naturally do not fulfil the expectation of the holders, who are asked to accept a 50% cut in the current rate of interest in return for a government guarantee and the certainty of redemption....The scheme does not strike us as over-generous."

Comment from the *Statist* is somewhat more enthusiastic:

"The proposed settlement should at once heal a quarrel which has been bitter as it has been protracted, and which has had, incidentally, unfortunate reactions on the flow of capital between the Mother Country and the Dominion.

"Even under the most favourable traffic conditions, the full interest could be paid only in exceptional years, and in others, nothing might be paid. The stockholders would, therefore, remain in a very speculative position, even if they won their case. Capital appreciation should, therefore, compensate to a considerable extent for any loss of interest.

"The terms are such that there can be little doubt of their ready acceptance by the stockholders. An unfortunate chapter will be thus closed, and a resumption of those intimate financial relations which had previously existed between England and Canada will ensue."

The more cordial feeling in the London money market on the subject of Canadian investments will not result in a resumption of business on pre-war lines for the reason that the situation differs very greatly from that of pre-war years. Canada does not need as much new money for railway construction nor for public development. It is well to recognize that from now on Canada will be in a position to furnish an increasing proportion of the capital required to finance new undertakings within the country. Already Canadian capital is beginning to play an increasingly important part in financing undertakings abroad; moreover, the New York money market is a source of supply for much more substantial amounts than were available fifteen years ago. On the other hand, the resources of the Dominion are capable of great development and opportunities should constantly present themselves as the country grows. The expansion in the power, pulp and paper, and mining industries in recent years furnishes an example of what may be expected.

It must be realized that the change in character of Canada's requirements will have the result that the Dominion will no longer take the same initiative in borrowing as it did before 1914. Railroads and public authorities requiring funds used to ask the London market to supply them; now, when opportunities for industrial development occur, it is more likely that the funds will be supplied in Canada or the United States if the Companies are being organized by Canadians or Americans, and that resort to the London money market in this connection will only be occasional. In other words, if Great Britain is to share in the profits of Canadian development,

and it is extremely desirable that she should—British capital must take the initiative. Under these circumstances it is to be hoped that investment organizations in London will keep in close touch with Canada in order that they may secure a fair share of the profits which are bound to accrue from the growth of this country.

Investors should bear it in mind that before investing in Canadian securities, they should make most careful inquiries from banks or responsible investment houses. Failure to secure returns from haphazard investments made without due investigation has resulted in bitter complaints against Canada. All responsible bankers wish their clients to be fully informed before they make investments and the English investor should make full use of the facilities placed at their disposal by the Canadian Banks and the responsible investment houses.

Publicity and Protection for the Investor.

In an unusually forceful article published in the September issue of the *Atlantic Monthly*, Professor William Z. Ripley of Harward University drew attention to the necessity for investors receiving more definite and more detailed information concerning the status and progress of the companies in which they are investing. Professor Ripley analyses the published statements of a number of companies, mentioning each company by name, and contrasting the careful and accurate information supplied by the United States Steel Corporation and General Motors as compared with the "utterly inadequate" and "misleading" information supplied by some of the other companies. While his article does not imply that the average stockholder will be able to make direct use of this information, yet, "specialists, analysts, bankers and others will promptly disseminate such information, translating it into terms which will be intelligible to all." Professor Ripley regards the process of making prices consonant with values and conditions as the fundamental reason for demanding such publicity. "'Rigged' market prices, based upon inside information are perhaps one of the most vicious features of the present situation. Relief from this menace may be had only upon complete revelation in contradistinction to that which has been so aptly described by Hastings Lyon, speaking of the prevalent practice among public utilities as limitless 'obfuscation'."

"The two essentials of an adequate statement are the balance sheet and the income account. The former discloses the condition of the company statistically—as at a given moment. It is an instantaneous photograph, giving a cross section, so to speak. The income account, *per contra*, reveals, dynamically, the course of affairs in perspective—viewed lengthwise throughout a period of time. Each is essential to a complete understanding. The balance sheet reveals what the corporation is; it gives but an inkling of what the corporation has been doing. There is just the difference involved between being strong and "going strong".

"Of the two, the income account is perhaps more significant, both immediately and prophetically. Yet of the two it is the income statement, as perhaps too informative, that is the more apt to be suppressed.

"At the threshold of intelligent corporate publicity stands a clear distinction between capital and income—the assurance that the property in being used, is not being used up. For, unless it be certain that the investment has been at all costs kept whole, there can be no security that it is not being in part redistributed under the guise of profits. It is fundamental, in other words, that so-called profits should all of them have been really earned, instead of having been partially abstracted from the capital fund.

"The finer distinctions as respects keeping the investment in fact are well put in the admirable report of the Philadelphia Company for 1925, each item being discriminately treated therein. 'Maintenance represents the cost of keeping the property in an efficient operating condition.' 'Depreciation is the provision made for retiring, renewing and replacing property through deterioration, obsolescence, and depletion.' The relative importance of each of these will vary with the business. Maintenance, with a heavy plant investment, will be relatively high in some; depletion is a first consideration in oil or mining ventures, obsolescence may loom large in a rapidly developing pioneer industry, as in the public utility field to-day.

"Statements devoid of adequate charge-offs for these purposes, in accordance with the varying local conditions, are utterly meaningless. Sound business practice should even make allowance for them before deduction of interest charges as a disclosure of the true picture. Even the bondholder, viewing his claim to interest as a primary deduction from earnings, will be deceived if he fails to realize that the full long-time security, for his lien, rests rather upon the preservation intact of the corporate estate, than upon the immediate likelihood of having current interest charges met. Such being the case for the creditor, how much more important it is for the shareholder, the real owner, to be advised at the very outset as to the preservation of his capital fund intact.

"Obsolescence, due to the fact that the world moves, is the most subtle and, possibly, the most undermining factor of all. Not only must the wear-out and tear-out of plant be cared for in every line of business, but the veritable transformation of the underlying economic conditions themselves must be taken into account. To meet all such circumstances, must, of course, be a matter of judgment and of degree; but to live in and for the day, rather than in the light of the long-time future, when the interest of thousands depends upon the decision, becomes almost a crime."

Passing on to the subject of Income accounts, he mentions several companies which fail to give information which he considers adequate and then mentions, by way of contrast "the white-hot lucidity" of the American Locomotive Company for 1925, frankly wiping out all profit and transforming it into a heavy deficit, in order to make full allowance for wear-out and tear-out. What a difference such a policy of disclosure makes by way of inspiring confidence in the good faith of the management.

"Adequate specifications is therefore imperative for the income account, as affording the most up-to-date indication of efficiency of the management. It is no chronicle of past events, as the balance sheet may be; no recital of bygone success or of past error. Income accounts are downright news. They ought to be pithy, nothing less. A fine example is the frank and open present-day policy of the American Sugar Refining Company, the more refreshing in view of its secretive antics years ago.

"Balance sheets are prone to be inadequate or misleading in two principal respects. One is the downright omission of important items in the property account. Another is the failure to disclose the method of valuation, whether it be of property or stock in trade."

After proposing that the stockholders use their authority to demand complete information he suggests a further remedy under the Federal Trade Commission law of 1911.

"This statute, which is usually thought of in connection with unfair trade practices and the regulation of monopoly, contains in Section 6 a positive delegation of authority to this body which is entirely adequate to the performance of the service so greatly needed at the present time. The record of debate upon the subject (at the time of the passage of the act) makes it clear that Congress intended this work to constitute one of its chief activities. Nothing will more directly conduce to popular thrift than to throw all possible safeguards about the investments of the common people. Let the word go forth that the Federal Trade Commission is henceforward to address itself vigorously to the matter of adequate and intelligent corporate publicity, and, with the helpful agencies already at work, the thing is as good as done."

So great was the impression made by this article in the United States that President Coolidge immediately announced his sympathy with the viewpoint expressed and began a study of the law to determine the Government's power to act. He stated that recommendations will be made to this coming congress in this connection.

This whole discussion is of special interest to us, because the January 1926 issue of the Monthly Letter of The Royal Bank of Canada, in dealing with this subject, began by taking up the advantages which would accrue to the investor through a more liberal publicity policy on the part of the corporations, and then went on to show that there were even more important advantages which might be realized by the whole financial structure of our economic organization through the effect of such publicity upon the business cycle. At that time, our Letter said in part:

"It is quite evident that great benefit would accrue to the business and financial structure from measures of credit control calculated to prevent the too wide swings in security prices with their attendant evils.

"Because changes in price level of securities increase the volume of business on the exchange, the whole financial organization surrounding the exchange is under severe temptation to disseminate rumors which will encourage changes in the prices of securities. Daily papers contain frequent reference to the formation of new pools, whose purpose it is to control and manipulate stock prices. While the activity of pools which function in a true speculative capacity is not under question, yet the circulation of false rumors injuring the value of stock, or the releasing of good news after the pool has bought from less intimately informed investors, and other destructive and injurious operations of this character result in the loss of earned savings and undermine the confidence of the investing public.

"When a company lists its securities on the exchanges of the world it is asking for financial assistance from the investing public. If the financial and industrial world wishes to retain the full confidence of this public it must come to recognize the rights of the individual investor. Semi-annual and quarterly reports may be issued with the idea of giving the public enlightening information as to the real status of the company. The responsibility of the Directors to the stockholders for the efficient and honest administration of the Company is well recognized and there will come a more complete realization of the fact that the interests of the investors are not fully protected unless the information they received concerning the company's affairs is both lucid and accurate. Already there is general effort toward greater industrial harmony through the industrial and customer ownership movements.

"To-day the world is economically disorganized and far-sighted leaders are doing their utmost to restore social stability and financial confidence. To wait for the government to take action demanding reforms may be disastrous. This is a matter which may be taken up from within, and increased public confidence gained through a voluntary recognition, by big business of its duty, in the direction of greater responsibility towards investors. The American Telegraph and Telephone Company and the United States Steel Corporation are among the leaders in this movement toward furnishing the public with the maximum information possible concerning conditions. It would be well for this movement to be intelligent and come from within, and not for it to be foisted upon the financial structure through legislative action.

"It is evident that the stock exchange is destined to become increasingly important as a public investment exchange and the steady pressure which the exchange is exerting toward wider dissemination of accurate information and their demand for quarterly reports, constitutes a most important step in this direction. This recognition of responsibility is a most hopeful sign for financial management, and industry must steadily raise its standards if full public confidence in the capitalistic organization of society is to be maintained."

Notes from London.

City Management.

London, 15th November, 1926.—Mr. H. Ross Clyne, in an address delivered to the Manchester Rotary Club, is of opinion that it would pay big towns and cities to have a salaried supervisor or controller. He would check wasteful expenditure, and probably save his salary over and over again, so that his appointment would prove a good municipal investment. In the course of a long address, Mr. H. Ross Clyne said:—

"What is a municipality but a large business concern? Therefore, it should be conducted on business lines, and have a general manager, or controller, or supervisor, or advisory head, who would be vested with authority, but not freed from responsibility. In a business house the general manager has to explain to his principals the why and wherefore if anything goes wrong in any department and a Civil Supervisor would be answerable to the City Council.

"Then, is there no call for the services of a civil controller or advisor to deal with the present mania for spending?

"So kindly do committees as a rule feel towards each other that the most extravagant and preposterous schemes are passed, when they sit together as the City Council. The slogan would appear to be "Help us to get ours through to-day and we'll help you with yours to-morrow."

"In many business concerns the heads of departments meet monthly under the chairmanship of the managing director and discuss matters of general import and policy, each being invited to make suggestions likely to advance the general welfare. Why should not chairmen of committees meet, under a civic supervisor, in the same way? The knowledge and experience given and acquired would prove helpful to chairmen in dealing with their own committee matters.

"In the *Times* of September 11, 1926, about two months ago—the possible unwisdom of the directorate of combines being formed of the chiefs of the various blended businesses was pointed out. As was truly said: There are many men perfectly competent to conduct small businesses who are completely lost when called upon to direct the activities of a great enterprise. The qualities necessary for success are different. A master of detail makes a very poor captain of industry—and many a fine business has been wrecked by the fatuous policy of re-electing to the board "Our old friend".

"Well, if that is so with ordinary business, what hope is there for civic councils—so long as the conditions of election and selection remain as they are to-day?

"It is absurd to affect to believe that the only man to fill the part of civic supervisor would have to be a master of electricity, gas engineering, surveying, sanitation, transport, and would have to be able to boss the officials who would henceforth be merely the normal heads of their departments for, of course, there would be no attempt to usurp the powers at present rightly vested in capable officials.

"He need not be a super Admirable Crichton to whom everything in every municipal department is familiar, nor yet a Lord Chesterfield on point of etiquette where the intermittent fever is raging for giving the Freedom of the City to every Thomas, Richard or Henry (British or foreign), on the least provocation!

"Some critics, as I have told, say the job is too big for any man yet born to undertake—but I fail to see it.

"What about the scores of high salaried, capable administrators of large business concerns with as many departments to supervise as a municipality?

"There are men with a genius for administration and with a magnetic personality to be obtained to fill such an office as I have merely outlined. A new profession would be opened out for men of the highest culture and training, and possibly advantaged by a University education. They would, when of proved competence, be able to command high salaries."

The Decline in Silver.

The bullion market attributes the decline in silver—which has fallen to the lowest level for ten years—partly to the Indian Currency Commission's recommendations regarding the metal, which they fear will cause a substantial falling off in Indian consumption in future years. Those in close touch with Indian conditions, however, do not share this view. It is true, says the *Times*, that the commission recommended the gradual reduction of the silver holding in the paper currency reserve, but the diminution will not necessarily involve sales in the market outside, or even inside, India. The economic progress of the country promises to be greater in the future

than in the past. The large irrigation works now in course of completion will alone add enormously to the country's production and its capacity to save. Tradition and social and religious customs, to which the broad mass of the people hold tenaciously, will cause them to invest their savings in silver ornaments, and the greater the savings the larger the demand for silver. There was a very remarkable consensus of opinion tendered to the Commission in India that a sharp drop in silver prices would neither dislodge the silver holdings of the people nor prevent them from continuing to put their savings into the precious metal. Further, there is a prospect that a portion of the silver rupees in the currency reserve will be absorbed into circulation. It should also be noted that in spite of the recent falling off in the Continental demand for silver, Europe is using more silver coins, and that the tendency to replace less valuable monetary tokens with silver will increase as conditions become more stabilized. Austria has already reintroduced silver coins. Germany and Hungary are doing so, and quite recently Italy decided to replace notes of denominations of less than 25 lire by silver coins. France and Belgium, when at last they stabilize their currencies, will no doubt again put silver coinage into active circulation.

The extent of the fall which has occurred in silver—yesterday the price declined further to 27*d.* per oz.—is prompting inquiries as to the effect which a lower range of values for the metal might have upon production. The United States is the world's largest silver producer, and interesting information on this point was provided in the evidence given before the Indian Currency Commission by prominent American witnesses—namely, Mr. Benjamin Strong, Dr. Jacob H. Hollander, and Dr. Oliver M. W. Sprague. An estimate was put forward of the extent of the probable silver production of the world made unprofitable by successive decreases in the price of silver as follows:—

(Millions of ounces fine.)

Price of Silver	Dry and siliceous ores	Copper-silver ores	Lead-silver ores	Total
c. per oz.				
50	15	13	19	47
33¼	75	40	25	140
10	94	44	52	190

Total world's production, 240.
Total silver accounted for, 220.

It was suggested by these American authorities that because of the large amounts of funds now invested in silver, copper, and lead mines, and the technical difficulties in closing and re-opening mines, production would be sluggish in reflecting changes in the demand for silver, and therefore that the production of silver is comparatively inelastic.

Fasting for Health.

Mr. John Crowley, a London accountant, recently completed a 60 days fast. Starting on March 22nd, he lived on nothing, except water and a little orange juice. For the first 30 days he took water only. When he began his fast Mr. Crowley weighed 16st. 2¼ lbs. He now weighs under 12st.

He looked quite fit and normal when he had completed his extensive fast, and as far as outward appearance went, he might just have had a seven-course dinner. All that gave him away was the fit of his clothes, they were many sizes too big and he has had to get a fresh ward-robe.

From time to time people take it into their heads to fast, either from religious enthusiasm or a desire to reduce their weight or benefit their health. But in these days, when everything must be turned into cash, fasting has been seriously taken up as a profession.

All Paris watched eagerly the fasting of Wolly, the Dutchman, who, enclosed in a small glass cage in the offices of a newspaper, attempted to break all previous records. With a chair and a table for his comfort, fifty packages of cigarettes, writing materials and plenty to read, he was surrounded day and night by a crowd of curiosity seekers anxious to guard him from any possibility of being fed.

The streams of people who filed before his cage became thicker and thicker as the ninth and then the tenth days of his fast arrived. On the night of the tenth day the newsboys prepared a feast before his eyes, devouring ravenously all the delicacies that their hoarded centimes could buy. However, they dispersed dejectedly towards midnight, without having been able to detect the slightest reaction on the part of the faster to their tantalising efforts.

At one o'clock in the morning, when there were but few visitors about, Wolly arose suddenly from a deep lethargy and wildly bit at his hands as if to quench his thirst from the blood that began to flow. Then he fell prostrate on the floor, and the official guards were forced to open the cage and take him immediately to hospital.

The above cases are examples of fasting as a means of gaining money. To turn to the opposite side we come to fasting as a means of health.

In the midst of the bracing uplands of Hertfordshire a mansion has been turned into a home to enable people to fast in a systematic manner for the benefit of their health. From results to hand it seems that the occupants of this home are improving wonderfully in health and strength as a result of their treatment.

It is confidentially asserted by leading medical men that if we were to fast for three days at a time every so often, we should feel the benefit of it tremendously. By fasting they mean a complete abstinence from everything except water for three clear days, punctuated with cups of tea and glasses of milk, lest the faster should get "too low".

The average person smiles at the idea of skipping his regular meals and protests, it would be impossible for him to abstain from food for three days. He fancies that by the end of the third day he would have sunk so low as to be beyond recovery.

The actual conditions are there, in nearly all cases, and I advise the reader to test them for himself, says a writer in *Popular Science*.

We take our last meal on Sunday evening and begin the fast on Monday morning, ending on Wednesday evening, water being food and drink for us during that period.

The first day the faster is sad; that is freely admitted; but on the second day he is much less sad, while on the third day he is not sad at all.

On this third day he feels tremendously better and lighter and younger, mentally, physically and morally.

The body is given a chance to get rid of all waste matter and consequently on the third day we are a good deal cleaner inside than on the first day, with a correspondingly toning up of the entire system.

Coffee.

Sir Francis Watts (Trinidad) writes thus on Coffee:—"Arabian coffee possesses the finest flavour and is the kind of coffee most readily sold; so from the marketing point of view this has preference. On the other hand, it is said to be less hardy than some other kinds and more liable to the attacks of pests and diseases; furthermore, it gives lighter yields and it has the disadvantage that it sheds its berries when ripe, so that picking has to be carried out at shorter intervals and be more carefully conducted. Except that they are liable to be lost, it does not do the berries any harm to be upon the ground for a day or two.

"Excelsa and Robusta coffee, on the other hand, are heavy bearers, and do not shed their berries when ripe; they are thus more easily picked and at considerably less cost; besides, these varieties are believed to be hardier and more resistant to attacks of pests and diseases. It is worthy of note that other varieties, notably Robusta, have been largely substituted for Arabian in Java in recent years and it will be well to watch the progress of events in that country. So far as I can see, the planter will have to gain his own experience and from it decide for himself what type of coffee he will plant when planting takes place on a larger scale, as it seems likely to do at no distant date. Something will, no doubt, depend on the market to which Trinidad coffee will principally go, and in this connection it may be worth while noting that coffees of the Robusta and Liberian types are not so favourably regarded in the United States markets, and it is significant that Robusta coffees are not accepted for delivery in respect of Exchange contracts on the New York Coffee and Sugar Exchange, though they are saleable on the open market. I understand that coffees other than Arabian are saleable on their merits in England and in European markets."

Radium Production in Belgium.

About four-fifths of the world supply of radium is now produced in Belgium. From the report of the Commercial Secretary to H. M. Embassy at Brussels it appears that in 1915 the Union Miniere Du Hauti Katanga began working the rich uranium deposits in the Belgian Congo. The ore is shipped to Belgium and worked up at the company's factory at Oolen, near Antwerp, at which operations were started two years ago. The output is limited to the demand, and is approximately 20 grammes per year.

Rubber Roads!

An experiment of much interest to highway authorities is being tried in London where rubber as a road surface is to be subjected to a very severe test. Although rubber has been used before, it has never been used in quite the same way as in this experiment.

Heavy terra-cotta blocks, 10½ in. by 8 in., are laid as a base to hold a super-imposed rubber cap, five-eighth of an inch in thickness. This is put on by a process which, it is claimed, will withstand the pounding-and-spreading-force of the heaviest traffic. The blocks with

these rubber caps are laid on a 12 in. concrete bed, with a cushion of sand three-quarters of an inch thick. They are being set in by means of joints, composed of a special bitumen and rubber mixture. Known as Gaisman blocks, the experiment is being carried out at the cost of the Universal Rubber Paviors (Manchester 1923), Limited, by arrangement with the City Corporation. The company will maintain the surface for a period of two years, and, if satisfactory to the corporation, will then enter into a maintenance contract.

This is the first practical public test of the invention. In Manchester, however, there was a private artificial test, in which a 13-ton steam lorry was sent over a strength of the paving 1,000 times in a day. The granite sides of the road were destroyed, but the blocks and the rubber held. The Guildhall experts think that the New Bridge-street test will be the most drastic which could possibly be devised, for the traffic to and from Blackfriars Bridge is the heaviest in the City, and probably in London. The rubber, it is claimed, absorbs vibration, and this is of great importance both to vehicles and to property. It is grooved to prevent skidding, and will, it is expected, be more silent than either wood or asphalt.

A representative of the Leeds Fireclay Company said that terra-cotta was being extensively used in building in London. Its success or failure for road work would be watched with deep interest. That company had considered such possibilities for some time. "After all," he said, "it is but a return to old ideals, for the Romans used terra-cotta extensively. Roman tiles are, for the most part, terra-cotta, while in the Roman pavements so often dug up in London that material predominates."

THE CRUDE AMBER INDUSTRY OF GERMANY.

While there are deposits of amber in the Nordic countries and in Rumania, Sicily, and Spain, Germany possesses the most commercially profitable deposits in the world.

This branch of German industry produces raw or crude amber chiefly, marketing it to refiners for the manufacture of smoker's articles and amber ornaments. Surface deposits occur above Koenigsberg in East Prussia on the so-called Samland coast on the Baltic Sea. Two coastal villages, Palmnicken and Kraxtepellen, lead in production.

According to data collated by the United States Bureau of Foreign and Domestic Commerce, the German amber industry was acquired by the Prussian State in 1899. Since 1924 it has been operated by a company, which is the sole producer at present.

The pre-war production of crude amber from surface "blue earth" on the Samland coast amounted to about 400 metric tons annually. During the war it dropped to only one-fifth of this amount. Since 1922 pre-war production has been bettered. Installation of modern mining apparatus on the Palmnicken deposits permitted a production of 442 metric tons in 1924 and a production of 497 tons in 1925.

The crude amber which does not enter the market directly is processed by smelting and briquetting to pressed amber. Furthermore, amber smelting yields, as commercial by-products, succinic acid and oil of amber (oleum succini) used by the paint and chemical industries. In the period from 1913 to 1925 the production of smelted amber amounted to 1,572 tons; oil of amber, 526 tons; and succinic acid, 55 tons.

In March, 1926, Germany's leading amber-goods factories merged in a new manufacturing company, which will produce its finished wares in direct co-operation with the State amber works.

The sales of amber both in domestic and foreign markets amounted in 1925 to 40 metric tons of crude amber, 9 tons of pressed amber, and 203 tons of smelted amber.

The Free State of Danzig is the chief purchaser of East Prussian crude amber, Danzig having a number of important finishers of this material.

THE PEARL FISHERIES OF COLOMBIA.

The richest of the Colombian pearl beds are on the north coast of the Goajira Peninsula, from Cabo de la Vela to Castilletes. Some pearls are taken near the Bay of Cartagena. Native divers bring up the shells, no equipment being used. Each boat pays the Federal Government 350 pesos per month license, and the rulings require that half of the boats operating must be of Colombian ownership, and that no company or individual may employ more than eight boats. Most of the pearls are marketed in Paris.

According to a recent report by the United States Commercial Attaché at Bogota, the Colombian Government is proposing itself to develop the industry on the Pacific coast, where pearl banks are known to exist off the island of Gorgona, in the region of Guapi, and mother-of-pearl off the Bay of Cupica.

At present 25 per cent of the returns from the pearl fishing go to the Federal Treasury, 25

per cent to the personnel of the boat, and 50 per cent to the owner. This arrangement was established by a commission of 11 appointed by executive decree for the inspection and exploration of the Pacific pearl beds. The Government plan for future operation is to divide pearl fishing into three zones, fixing alternating seasons for fishing, thus giving time for replenishing the beds.

THE JUDGING OF BOOKS.

"Books are judged even as men are judged, now or hereafter; and the same division which shall be made celestially occurs terrestrially, when the good books are separated from the bad, and the first are received into fame without end, but the second are damned everlastingly," writes the Hon R. Erskine of Mar in the *London Quarterly Review*.

"Every man and woman who sets up for an author writes to acquire fame or money or both, or to serve some other end which he or she regards as sufficient unto the pains which authorship entails upon them. And roughly speaking, there are two kinds or classes of authors; they who have been bred up to it, and have adopted letters as a profession, and they who dabble in authorship, and so are not of the true household of the craft, as it were.

"The work produced by the first is often little superior, and sometimes much inferior to that produced by the second; the work produced by the second is in some cases entitled to take rank with the best efforts of the first; but as a rule it is very inferior to it.

"What the judge is in a court of law, so is, or should be, the critic in the world of letters; and laws are to citizens what the canons of criticism are to letters. At all events, the letter is the relationship in which men of letters should stand to the laws of criticism; and would indeed stand, doubtless were the canons of criticism as fixed and as certain as they ought to be.

"That they are not as certain as they might and should be springs from the nature of literary criticism, which is rather like the wind that blows where it listeth, and at no time subserviently to human control. There have been endeavours made from time to time to reduce into an absolute system these so-called laws of criticism, and, undiscouraged by the little progress that has as yet been made in that science, professional critics continue to labour to produce a sufficient canon of their craft; but still are they very far indeed from imitating with success the precision and clarity which attends some law-giving, though doubtless not all. To say truth, it is a somewhat rough and ready method by which the book and its author are used to be judged. The sun of perfection in criticism may rise with the morrow."

By Airship Across the Atlantic.

The Zeppelin Works at Friedrichshafen have received information from Madrid that a Royal Decreee has been issued which grants a concession to the Colon Company to establish an airship service between Seville and Buenos Aires. The concession is for a peirod of five years, and a subvention of 30,000,000 pesetas will be available as soon as the service is in action. The Colon Company has been formed for the purpose of carrying out trans-atlantic flights.

The establishment of airship communication between Seville and Buenos Aires was projected in the year 1920, and the intervening period has been employed in metallurgical and other technical studies. The subvention placed at the disposal of the company by the Spanish Government is equivalent to about £950,000, and is to be spread over the five years for which the concession is granted. Twelve voyages in each direction per year are being arranged.

6,250 MILES VOYAGE.

The distance to be covered is 6,250 miles and, according to the latest plans, airships with a capacity of 135,000 cubic metres, which is nearly double that of the *ZR3*, are to be employed. It is calculated that the voyage from Spain to the Argentine will be accomplished in four and a half days, and the Spanish Government requires that the service shall be opened within three years' time, but as it is probable that the large Zeppelins will not be ready by the autumn of 1929, the service will commence operations with *LZ127*. This airship has a capacity of 105,000 cubic metres, and is now being built at the Zeppelin Works at Friedrichshafen with the aid of the proceeds of the national subscription raised by Dr. Eckener. It will be able to carry a load of 15 tons. *LZ127* will probably be ready to make trial flights in the course of the autumn of 1927.

The Zeppelin Works at Friedrichshafen are not large enough to be used for the construction of the new trans-atlantic airships, and it has not yet been decided whether these works shall be correspondingly enlarged, or the new airships shall be built at the Zeppelin Works that are to be erected in Spain.

Sesqui-Centennial International Exposition.

Chart Making Methods.

Philadelphia, Oct. 25, 1926.—How land may be measured, tides gauged, and maps charted are a few of the Federal Government services illustrated among the national exhibits at the Sesqui-Centennial International Exposition in Philadelphia.

Such pursuits as "Hydrography" "Cartography" and "Geodesy" are translated into easy terms in the exhibit of the United States Coast and Geodetic Survey. Hydrography becomes the science of surveying lakes, rivers and seas, and in this section are shown a complete deep sea, sounding machine and a sounding tube. The exhibit is in the Palace of the U.S. Government.

"Cartography" resolves itself into the absorbing process of map making. This branch of the work is illustrated by photographs of the field records and other data pertaining to the chart of San Francisco Harbour, illuminated negatives, copper and aluminum printing plates, color plates and the finished charts.

"Geodesy" or land measurement is effected by modern instruments which have been placed on display and include an astronomic transit, chronograph, zenith telescope, signal lamp, and other delicate tools which have been developed by the Bureau to meet its requirements of high accuracy and speed.

The Coast and Geodetic survey has a world-wide reputation for the high accuracy of its geodetic work, which includes the determination of latitude and longitude, triangulation and levelling, gravity measurement.

Tides, topography and magnetism are other branches of the service which are included in the Sesqui exhibit.

The central space of the exhibit is occupied by a realistic model of the wire drag, a practical device perfected by the Bureau engineers for discovering submerged pinnacle rocks and steep shoals which are ordinarily missed by the various sounding devices. The background of the tank containing the drag model consists of a land and seascape painted on canvas and illustrates the sound ranging method of obtaining the position of a surveying vessel when out of sight of land.

This method has been developed recently by the Coast and Geodetic Survey in conjunction with the United States Bureau of Standards. It utilizes the known velocity of sound in water to obtain the distance from known shore stations. The model illustrates the sound wave and the radio wave by flashing lights.

The entire exhibit shows the progress made in the classes of higher surveying and chart making since 1816, when the present Bureau came into existence for the purpose of making accurate charts of the coasts of the United States and possessions.

Sculptural Exhibits.

More than three hundred pieces of sculpture representing the work of 200 artists are on display in the Palace of Fine Arts at the International Exposition in Philadelphia.

Most conspicuous among them perhaps is the loan collection of Rodin's work, containing first copies of many of his most famous pieces. Such noted bronzes as The Three Graces, Clemenceau, Balzac, Study for the Burghers of Calais, The Kiss, The Thinker and Bernard Shaw are among the scores which are placed in a special gallery known as the Rodin Museum. Studies of hands, mythological subjects, marbles, plaster and glass are also included in the collection.

Fifty of the most important works of Ivan Mestrovic, famous Jugo-slav sculptor, are in that nation's display at the Sesqui. Many of them have never been seen in the United States and a number have never been shown before.

The collection includes two carved wooden panels, "Christ and the Merchants" and "Madonna and the Angels", incomparable works of their kind, and three important marble groups which are the property of the Jugo-Slav Government. None of the sculpture is of temporary material, as is common with many exposition collections, but all are in marble, bronze or wood.

France is represented in sculpture by six works by Degas. They include such subjects as Horse standing, Dancer at Rest, Masseuse, and The Right Heel.

Among the Russians the work of Sergei T. Konenkow is particularly outstanding. He is known as the "Peasant Woodcarver," and is recognized as the most distinctively original worker in that medium who has appeared in the last one hundred years.

Konenkov, who has lived all his life in the forest, imparts to his work a quality hitherto unattained by other wood carvers. His creations do not depict merely an object or person. They express the soul and feeling back of the

physical manifestation. A discriminating use of color enhances the beauty of the figures. His "Spirit of the Forest," in particular, demonstrates the unusual quality of his work.

Most prominent among the American sculptors for the number of works displayed are Paul Manship, Charles Grafly, and Albert Laessle.

In front of the building are a number of magnificent bronzes. Harriet Frishmuth's The Vine, and Beatrice Fenton's Sea Weed Fountain, are prominent among these, while Adam, Eve, and the Shadow, by Rodin, fill another spot.

Persian Woman Leader at the Exposition.

Mme. Zorah Hedairy, Minister of Public Works at Persia, and the first woman to hold such a post, has established headquarters in the Persian Building at the Exposition, in Philadelphia, in preparation for a campaign to enlist the aid of American women in modernizing her country.

She is a member of the Persian Commission to the Exposition, and is one of the few women of her nation who have removed the yashmak, or Moslem veil. It is Mme. Hedairy's plan to interest Americans, chiefly women, in the affairs of Persia, and to help to create a market for articles manufactured by the Persian women. She plans an educational programme for the women of her country, because only by education can a woman obtain her liberty and gain permission to remove the veil, which has been a badge of virtual servitude for generations.

Military Schools Day.

"Military School Day" will be observed at the Sesqui-Centennial International Exhibition, in Philadelphia, on November 5. Widely known military schools from several states have already entered drill units for participation in the competition to be staged in the Sesqui on that day.

The manœuvre of the uniformed cadet-students will be demonstrated before Brigadier-General H. G. Learnard, Commander of Camp Anthony Wayne, the composite military camp of regular army soldiers quartered in a model tent-city in the Exposition grounds. The Sesqui-Centennial Exposition management will present a silver loving cup to the unit declared winner in the contest.

Indian Economic Notes.

Tea Culture in Assam.

The Director of Agriculture, Assam, in his report on tea culture in that province for the year 1925, states that the total number of tea gardens in the province at the close of the year was 930 against 906 in the previous year. Nine new gardens were opened during the year in the Cachar district, six in Lakhimpur, four in Goalpara, four in Sylhet including one garden which was not included in the previous year, two in Sibsagar and one in Darrang. In Sylhet one garden which formed part of another garden became a separate concern. One garden was amalgamated with another in each of the districts of Sylhet, Goalpara and Sibsagar. One garden in Balipara Frontier Tract was transferred to the Darrang district. In Kamrup five gardens were not worked during the year. The total area under tea increased from 412,859 acres to 416,477 acres, new extensions being 6.256 acres and abandonments 3,034 acres. The increase is due to the hopeful condition of the tea industry. The area plucked during the year was 400,544 acres against 397,057 acres of previous year and represents the same proportion of the area under tea as in last year, *i.e.*, 96 per cent. The total area of land comprised within the tea estates was 1,556,292 acres against 1,538,960 acres of which about 27 per cent, as in 1924, was actually under tea. Notwithstanding the increased area under tea, the daily average labour employed in tea gardens fell from 534,204 persons to 527 496 of which the permanent garden labour was 461,221, permanent outside labour 30,252 and temporary outside labour 36,023, against 471,361, 25,745 and 37,098 persons respectively, in the preceding year. The shortage in labour occurred mainly in the districts of Darrang and Lakhimpur. Consequently the incidence of area under tea on labour increased from .77 acre per man in 1924 to .79 acre during the year under report. Although the area plucked was larger the total outturn of tea manufactured in this province was less, amounting to 223,660,970 lbs. of black tea and 1,518,717 lbs. of green tea against 236,053,069 lbs. and 1,100,040 lbs. respectively, in 1924, or a decrease of 11,973,422 lbs. in all which is a little over 5 per cent. The decrease occurred mainly in the districts of

Lakhimpur, Sibsagar and Darrang, and is due to the unfavourable condition of weather and general shortage of labour, and also to the fine plucking in some large gardens. One Indian garden in the Nowgong district could not manufacture tea for want of labour. Green tea was manufactured in two gardens each in the Sylhet and Goalpara districts and one in Cachar. The average outturn per acre for the province fell by 35 lbs. from that of the preceding year. The prices fell slightly from the previous year but were still high.

India's Trade Prospects.

Speaking at the Sheffield Chamber of Commerce, Earl Winterton, the Under-Secretary for India, said no man could foretell exactly in what way Indian trade would develop, but the growing prosperity of the country could not fail to bring new demands into existence besides enlarging the existing demands. Imports of textile, mining and agricultural machinery, which for years had been showing a tendency to increase, would probably be large, and no man could say where that increase would end. As transport developed the demand for forgings would grow. Transport was developing relatively much more rapidly in India, both on road and rail than was the case a few years ago. "There is a weakness in the conduct of British trade in India in all or in most of its branches" Earl Winterton continued. "I am told there is a tendency on the part of British firms to underestimate the vast importance of providing themselves with the best possible representation in India. Mr. Arthur Samuel, the Minister for Overseas Trade, has asked me to refer to this matter. It is true of all countries, and especially true of India, that the man who is going to sell your goods must possess two kinds of knowledge, knowledge of all the merits of the goods and knowledge of the special tastes and needs of the local population. "It cannot be sufficiently emphasized that the day has gone by when all you have to do is to say "These are British goods" dump them down in the country and expect them to sell. "It is not enough to appoint a local firm, who have plenty of more important business to attend to from their own point of view, and wait in hopes of orders, nor is it sufficient to send out a representative who has no personal knowledge of the country. I know the problem is not an easy one to solve, but if the required qualifications are not found in one person, two or more must organize in combination. I am sure the expense will not fail to justify itself." The growth of Indian manufactures, Earl Winterton added, was inevitably leading to rising standards of living and to the development of new needs, not all of which India would be able to supply for herself.

Anti-Tuberculosis Campaign.

Dr. C. Muthu, tuberculosis expert, made the following observations at a farewell entertainment given to him in Madras on the eve of his departure for England :- "Next to food in raising the vitality of the people comes the importance of looking after women and children. It has been the proud tradition of the English people in times of danger to save women and children first. So in this time of crisis, when India is eaten up with poverty, disease and degeneration, we must save our women and children first. Woman is the guardian and preserver of her race. The children of to-day are the citizens of to-morrow and every effort to improve the physical well-being of children and women will bring hundredfold success in years to come by creating a stronger and more efficient race and in diminishing, if not eradicating, many diseases. They must be provided with clean air, clean food, clean water and clean surroundings. It is the duty of every civilized municipality to ensure these elemental wants to all its citizens. In this connection, may I strongly recommend that school hours for boys and girls should be changed to from 7 to 12 or from 8 to 1, with a short interval, for a child cannot take in any intellectual study in the hot hours of the day and the heat imposes a great strain on their growing brains. There is a demand now for a tuberculosis sanatorium all over the country and the demand will become more insistent as time goes on. But I must warn you that sanatoria alone will not be sufficient to get rid of tuberculosis from this country. No doubt it is the first step and a very important one and its good effect will be seen after a few years in the education of the public in all matters of hygiene and sanitation. The after-care of ex-patients is as important as sanatorium treatment. Therefore, in dealing with tuberculosis there must be a combined and well-organized scheme to deal with all the phases of tuberculosis treatment. This is why a sanatorium and garden colony where ex-patients can go and stay with their families to continue treatment under ideal conditions will meet the needs better than a sanatorium alone. The Thambaram scheme will, I hope, be developed into a garden colony. I have proposed such a scheme and laid out plans for

such, to the Karachi Municipality and every municipality should seek expert advice in establishing a colony on similar lines a few miles away from the city or town."

The Late Mr. R. D. Tata.

It is with the deepest regret that we have to record the death of Mr. Ratanji D. Tata, the eminent industrialist of Bombay, nay, of all India. The late Mr. R. D. Tata died at Hardelot, near Paris where he had gone for a change. The death of Mr. R. D. Tata is an irreparable loss to the great Tata family and to the world-renowned firm of Tatas. A man of acute intellect and shrewd business acumen, it would be hard to replace him. Mr. R. D. Tata was 72 when he left for his last holiday but even then he displayed untiring energy. He was an indefatigable worker and the younger generation of assistants at the Tata offices used to wonder where he got such marvellous energy from. Besides these sterling qualities, Mr. Ratanji Tata possessed a loving and kindly heart and he was in the best sense of the word a great Indian and a great patriot. His sudden death deprives India of one of her greatest sons. May God rest his soul in peace and give fortitude to his family in their great bereavement. The following is taken from the *Bombay Chronicle* :—

'Mr. R. D. Tata was for some time a member of the Imperial Legislative Council and later it was through his untiring energy and perseverance that he was able to secure the protection granted to the Iron and Steel Industry. The great traits of Ratanji Tata's character were perseverance, diligence and robust faith in all his undertakings. In times of great and heart-breaking crisis he never lost his equanimity: always calm and clear-headed he displayed such nerves and courage that those who worked with him received inspiration and enthusiasm to see through the crisis with their master. There are few in our midst or as a matter of fact in any other country who at the age of 72 remain at the head of such vast undertakings and personally guide them through unprecedented financial crisis. A man of regular habits, moderate living and following the highest principles of life, Ratanji Tata set an example to other industrial magnates of the city. He was the first to come to the office and often the last to leave even recently just before his departure to England to recuperate. That high sense of duty has often steered the concern whose destinies he guided even upto the day of his death and has been an inspiration to all colleagues and co-workers who are left to mourn his sudden demise."

Electricity from Air.

Aeronautical scientists have been working on the production of a new kind of windmill which shall be many times more efficient than the old type. Such progress has been made that it is now thought possible that instead of disappearing from the landscape the windmill, in a new form, may reappear in increasing numbers. At a recent meeting of the Dutch Royal Institute of Civil Engineers experts confidently predicted that the picturesque Dutch windmill in a modified form has in for a new lease of life. Already one of the foremost English men of science, writing of the future, has prophesied that England will eventually be dotted with ærodynamically efficient windmills which will generate electricity sufficient for all purposes. One of the chief difficulties so far has been to evolve a satisfactory type of storage battery for use in conjunction with the fluctuating output of the windmills. The new windmills vary in shape and construction but the tendency is to use four tapering blades carefully clambered, like the wings of an aeroplane. These blades are mounted on ball bearing behind the tower supporting them instead of in front. The new windmills may not appear quite so picturesque as the old, but they are by no means ugly, and they are certainly more pleasing to the eye than many other kinds of power generator.

Value of Iodine.

Research has recently been carried out which has shown that iodine may play an important role in soil fertilization. As with humans, says the *Indian Scientific Agriculturist*, where iodine has been shown to be an essential to health only minute amounts are advisable to produce good results ; in fact, poisoning may be brought about as easily in plants as in humans. Experimentation has shown that the application of about one pound of iodine, as potassium iodide, per acre resulted in an increase of yield amounting to about one and a half tons of sugar beet per crop. Seasalt for human food and Chilean nitrate for plant food are carefully purified of iodine before being put on the market. It has been suggested that it may be a wise plan to dose the community with a minute amount of iodine added to salt or domestic water used for human consumption, as is being done in Austria. Some engineers believe that inclusion of the minute amount of iodine needed to stimulate plant growth could be made

to all commercial nitrate from Chile, thereby enhancing the product for fertilizer purposes at a negligible cost to the producers.

The Late Prof. Gajjar.

We are extremely grieved to record the death of Prof. M. J. Gajjar, M.A., F.C.S., which took place at Bombay at the early age of 17 on Sunday, the 25th July 1926. Prof. Gajjar was the nephew of the late celebrated chemist Prof. T. K. Gajjar of Victoria Statue fame. Prof. M. J. Gajjar started the State Chemical and Technical Laboratory at Lashkar and worked as its director from 1916 to 1920, when subsequently it was given under the charge of Sardar Puran Singh, F.C.S., of Dehra Dun, late Chief Chemist to the Gwalior Government. Prof. Gajjar while working as Director of the Laboratory issued some monographs on the research work carried on by him and his staff, one important publication being "The Bibliography of Indigenous Drugs". He was very much interested in indigenous drugs and he had in view a systematic investigation and analysis of all the Ayurvedic drugs. Prof. Gajjar was the proprietor of 'The Standard Chemical Works' and 'The Ionic Pharmacy' at Bombay. He was also the energetic Secretary of the Vanita Vishram (Women's Home) at Bombay, and as a mark of respect to the deceased, the institution and the practising school remained closed for one day. We sympathise with the members of the bereaved family in their great loss.

Rural and Urban Wages.

The Director of Industries, C.P., has issued a statement of rural and urban wages prevailing in the Central Provinces and Berar for the year ending the 30th June 1926. In rural areas agricultural wages were on the whole stationary, with slight fluctuations in several districts. There was some increase in the daily wages earned by village blacksmiths and carpenters in the Nimar district while in Seoni the annual wages for both ploughmen and herdsmen ranged from Rs. 60 to Rs. 72 and Rs. 48 to Rs. 50. It must be mentioned here that besides these cash wages, there are also grain wages. In Wardha, the annual wages of ploughmen fell from Rs. 175 to Rs. 200 to Rs. 75 to Rs. 100. Although there were grain wages, their estimated value does not make up for the fall. In urban areas, the strength of workmen remained on the whole steady. In Mandla, there was an increase in the rates of all classes of labour. An increase in the rates of urban labour was also noticed in Bhandara, Raipur, Akola, Amraoti, and Buldana. The earnings of the weavers in Nagpur and Bhandara have fallen. The Director of Industries says that on the whole the year was normal and business fair. These figures only give us an idea of the wages earned by workmen in the rural and urban areas. Sometime ago, the local Government appointed an officer of the Provincial Service on special duty to study the economic condition of workmen and to prepare some typical family budgets. May we enquire whether the investigation is still proceeding? To get an idea of the economic condition of these workmen, we require, besides a statement of their wages, some typical family budgets. We hope that the local Government would expedite the publication of the new statement under preparation.

Flowers and Fruits on the Nilgiris.

The Madras *Agricultural Digest* No. 18 for June says:— At Ootacamund the monsoon commenced on the 10th but subsided after a few days. The fine weather suited the flowers and there was an unusually good display this year. Among new plants to flower was *Centaurea Americana* which will prove very suitable for herbaceous borders. Those who know their English flowers will recognize this as a glorified "Knapweed" with pale lilac and white flowers five inches in diameter. For some years a fungoid disease has attacked the dahlias at Ootacamund. To overcome this they have been grown from seed, and this year there was a display of seedling dahlias which was much admired by visitors. Sad to relate, one of the *Pinus insignis* trees near the entrance to the gardens died and had to be removed. Others are dying and will have to be taken out next year. The monsoon wind broke a large branch off the *Ficus macrophylla* above the band-stand and this has spoiled its appearance. At Coonoor there was a shortage of rain, which was detrimental to gardens. A very good crop of plums has again been obtained at the Fruit Station, and 1,687 lbs. were harvested during the month. Most of these were sold in Coonoor from the show rooms, which serve as a very useful centre for the distribution of fruit, seeds, Government industrial products, as well as a bureau of information. The orange crop at Kallar suffered badly from an attack of fruit-fly, but hopes are entertained of a good second crop. The season has been a bad one for potatoes and in many places the crop has failed entirely. The price is in consequence

high. There will be a poor crop on the Nanjanad Experimental Station on account of the dry spell.

The Sabaramati Asram.

Dr. E. Stanley Jones recently delivered a lecture in South India on his experiences at the Sabaramati Asram. Life at the Asram, said Mr. Jones, was pure and simple and was characterized by a degree of strict discipline. We are told that the first work that was given for anyone who entered the Asram was scavenging. Mahatma Gandhi insisted on this work as a lesson in humility and service. Dr. Jones said that during his stay at the Asram, he came across three persons, who had newly entered it. One was a Hindu Pandit, the second was a South Indian Hindu and the third was a German lady but every one had to take to scavenging for at least three months. Dr. Jones said that he was impressed by Mahatma Gandhi's simplicity and sociability. Speaking about Rabindra nath Tagore and Mahatma Gandhi, Dr. Jones said that Tagore was a great personality and that any one who approached him was inspired with awe and reverence while the Mahatma was simplicity itself and was very affable. After referring to the Mahatma as the seer of Sabaramati, Dr. Jones asserted that the Mahatma had not only a moral but a spiritual message to the whole world and that his teachings were sure to go a long way in the regeneration of India into a land of nobler and purer peoples. This is a very eloquent tribute indeed to the Mahatma coming from a man like Dr. Stanley Jones.

India's New Training Ship.

The sum of Rs. 2,15,000 has been approved of by the Standing Finance Committee of the Legislative Assembly for the establishment of a training ship in Indian waters. This is an important step seeing that it is the genesis of India's future navy. The Government is already committed to the development of an Indian Mercantile Marine, and the training of Indian cadets for the position of executive officers on board ships is the first step in pursuance of that policy. The Government are now making enquiries as to whether the various universities in India will accept the certificate of the ship as equivalent to the Matriculation certificate. There is also the question of recognition by the Board of Trade in London to be considered. Doubtless some arrangement will be made in this connection before long. It seems likely that the new training ship will be stationed off Karachi Harbour, though nothing definite is known yet. We believe that most of the experts concerned in the scheme are in favour of Karachi being made the headquarters, though the claims of Bombay have by no means been overlooked.

Kipling's Little "Brown Baby".

Lord Balfour referred the other evening to "the green, paper-bound, first Kipling, so precious to collectors, but there is one small item among that author's early productions which made its debut in brown and is now worth more than any of others," writes the *Manchester Guardian*. This "sort of a book" as its author called it, comprises sheets printed on one side only, wire-stitched and bound in brown paper, secured with red tape, all in imitation of an Indian Government official publication. It bears the date 1886 and the title: "Departmental Ditties. On Her Majesty's service. Only (this erased) No. 1. To Heads of Departments and all Anglo-Indians. Rudyard Kipling, Assistant, Department of Public Journalism, Lahore District." This pamphlet—the first issue contained only twenty-six poems—Kipling printed himself and posted up and down the British Empire with a resulting sale and demand which led to its issue as a bound volume in conventional form in London. "But I loved it best," says its author, "when it was a little brown baby."

Payment by Cheque.

An English court was recently called upon to decide whether sending a cheque by post was equivalent to payment. It seems that the defendant in the action was in the habit of purchasing goods from the plaintiff and invariably sent his cheques by post in payment of the price. The plaintiff never objected to this practice but on one occasion a cheque for £503 was not received by him and he claimed the amount. It appeared that a stranger presented the cheque to the banker and disappeared with the money. It was argued on behalf of the defendant that the cheque must be deemed to have been paid as soon as it was posted and the trial judge held that the plea of payment was proved in the circumstances of this case. The Court of Appeal set aside this finding. It was held that "there was no course of business that the mere delivery of the cheque to the post office was equivalent to delivery to the plaintiff. It would be outrageous for the court to infer that the plaintiff ever requested the defendant to send his cheques by post and agreed

to run the risk of loss in the transit." The decision is interesting to people in India, where payment of bills by cheques through the post is extensively carried on.

AGRICULTURAL WORKERS IN SWEDEN.

The Swedish Parliament has repealed the Act of 1833 defining the relations between masters and servants thereby acceding to one of the most insistent demands of organized agricultural labour in Sweden. The Act had not lately covered more than about 60,000 out of a total of 275,000 employed workers in Swedish agriculture; some of the most out-of-date clauses had been abolished in 1919-20. Nevertheless, the continued existence of the Act even in its mutilated form was a reminder to the workers covered by it of an old inferiority, and during the agricultural strike of 1924-25 the discovery had been made that certain of the clauses in the Act could be used to the detriment of the workers.

SALT FROM BARODA.

The Government of India having permitted the Baroda State Government to export salt to Bengal from Port Okha, within the territories of the State, the Baroda Durbar have granted a concession for the manufacture of salt and alkalies to Mr. Kapiiram Vakil, chemical engineer.

SWEDISH PROFESSOR ON INDIA'S CURRENCY.

Professor Gustav Cassel, the eminent Swedish economist and financier, has published his views on Indian currency affairs. He considers that Indian monetary policy is a factor of very special importance for the world supply of gold. Had India, as was contemplated, adopted a gold currency of the old type with gold in free circulation a new demand for the metal would have arisen which would to a marked degree have enhanced the demand for it, and would have practically frustrated the policy which aims at restricting the field of gold requirements. The risk was so much the greater as the creation of fresh large demands for gold for India would in all probability have intensified the eagerness of various countries to guard their accumulated gold reserves and, if possible, to increase them. From this point of view the recently terminated labours of the Indian Currency Commission have been of the very greatest interest to the world in general, and to India herself in particular. The Currency Report has endorsed the Professor's view that at almost any cost, the creation of a quite unnecessary demand for gold caused by a possible gold currency for India should be obviated. A further point emphasized in his evidence before the Commission, was that the Indian currency could quite well be maintained at a stable parity with gold, and thus in all respects do the same service as a gold standard of the traditional type, without having recourse to such an "extremely revolutionary measure" as that involved in substituting the yellow for the white metal as a circulating medium in India.

With a view to introducing some new and up-to-date designs in sarees and calico printing the Department of Industries, Bombay, has had prepared by the students of the Sir J. J. School of Art, Bombay, some drawings of designs in water-colour suitable for saree borders, corners, purdahs, table-cloth and for calico printing in general. These are now ready and can be seen at the Office of the Director of Industries, Old Custom House, Bombay, on all working days except Saturdays and holidays. Particulars as to the cost of supplying copies of the designs, etc., can be obtained from the Principal, Sir J. J. School of Art, Bombay, direct.

AN INDIAN-CLAY MODELLER.

A Bombay Correspondent writes:—If there is truth in saying that "Full many a flower is born to blush unseen" it is true in the case of young V. R. Madhava Rao of Matunga, Bombay, who has attained perfection in the art of Clay-modelling on Western lines the knowledge of which seems to have come to him almost by intuition. His figures are so individually perfect and so faultless in their speaking similitude to the originals that fancy easily cheats itself into the belief that it is really the living breathing forms and not the counterparts in clay. The facility with which his fingers manipulate during the two-hours' sitting has come in for admiration in many quarters and it is significant that photographs of his works are being reproduced in western pictorial papers with a note of appreciation in each case. He is an Indian first and a Mysorean next.

WORKMEN'S COMPENSATION IN BOMBAY.

The annual report on the working of the Workmen's Compensation Act in Bombay states that there were 237 applications for disposal during 1925 of which 45 related to fatal accidents, 66 to permanent disablement, 9 to temporary disablement, and 108 were for distribution of compensation deposited with the Commissioner. During the year under report over Rs. 1,09,000 were deposited with the Commissioner of which Rs. 93,000

represented the amount of compensation to be paid to dependants of workmen whose injuries resulted fatally and Rs. 16.000 represented the amount of compensation deposited in respect of non-fatal accidents. A sum of over Rs. 95,000 was paid out to various claimants, leaving a balance in the hands of the Commissioner of over Rs. 20,500 at the end of the year. The returns submitted by 155 employers indicate that 1,95,631 adults and 3,347 minors were employed in factories, 2,458 adults were employed in mines, 4,877 adults and 3 minors were employed in Tramways, 8.319 adults in the Port Trust, 21,098 adults and 19 minors in all other concerns. The total number of accidents was 2,300, of which 30 were fatal; 82 resulted in permanent disablement and 2,188 in temporary disablement. The Commissioner points out that in two cases his order for payment of compensation was of no avail whatever to the unfortunate applicants because soon after the notice of hearing of the application was served on the employers, they took steps to file their schedule in the Insolvency Court. During the year under report 289 persons were awarded compensation of whom 284 were adults and 5 minors. Out of the adults 118 were awarded compensation in respect of fatal accidents and the remaining four for disablement either permanent or temporary. Of the 5 cases relating to minors, 1 was for fatal accident and the remaining 4 for permanent disablement.

Salt Export Rules.

The Salt export rules recently published by the Government of India remove certain restrictions on the export of salt manufactured in the Presidency of Bombay and Sind, which should enable manufacturers to extend their business. Salt can now be exported free of duty from salt works in the Presidency of Bombay and Sind to all destinations outside India. It must, however, be taken direct from the salt works to Bombay or Karachi, as the case may be, where it must be shipped under the supervision of the Customs Officer. When shipped, it shall be taken direct to the destination specified, in the permit, within the period prescribed. If the Customs Officer finds that the quantity of salt under removal is in excess of the quantity specified in the permit, he will recover duty on the excess. The excess quantity shipped will be entered in the bill of lading. The exporter of salt will, however, be entitled to get a refund of duty on his obtaining from the Collector of Customs at the port of destination a certificate in the prescribed form. Rules have also been issued remitting the duty imposed on salt manufactured in Sind when such salt is transported by sea from Karachi to Calcutta subject to certain conditions. The detailed rules will be found in the Government of India, Finance Department notifications published in the Bombay Government Gazette, Part I of September 2.

Indian Industries.

A recent issue of the *Financial Times* contains an article from Calcutta in the course of which the writer declares that one result of the War has been to stimulate enormously the industrial development of countries whose industries were backward in 1914: and that India is such a country. In support of this statement he gives some interesting statistics. Before the War, India consumed annually 3,600 million yards of cotton goods, 2,600 of which were imported and 1,000 manufactured by herself. To-day the consumption is the same, but the proportions are very different—2,000 million yards manufactured and 1,600 millions imported. Before the War, Calcutta exported about 60 per cent of her jute in the raw state, and 40 per cent in the shape of cloth or bags. To-day the proportions are exactly reversed. Important as they are, these figures would have been still more so if they had included a comparison between the exports of raw cotton before the War and at the present time. The Statistical Abstract for British India says that, in the "cotton year" of 1924-25, nearly 450,000 tons of home-grown cotton were consumed in India, while the export of raw cotton, for the last six months of that year, amounted to approximately 400,000 tons. It would seem, therefore, that the total exports are still much larger than the total home consumption; though doubtless much less so than they were in 1914.

New Silk Secret.

Dr. Dinshall R. Nanji, of Birmingham University, and Dr. Paton, formerly of Birmingham and now of Bristol, have, after seven years' research, found a process which may have a far-reaching effect on the textile trade. It is claimed that they can make a substitute for artificial silk from jute at a cost of £100 a ton, whereas the market price of artificial silk is between £600 and £800 a ton. Tests prove that the new product is in every way comparable with, and, it is claimed in many ways superior to, the artificial silk at present being marketed. A substitute

for cotton, derived from China grass, is also said to be possible. A soft, lustrous, and strong fibre is produced which is not brittle, and which can be spun without difficulty.

Australian Sandalwood Oil.

A report of the Science Committee of the Pharmaceutical Society of Great Britain presented to that body and adopted by it on July 7, stated that: "Some correspondent has shown that this description of sandalwood oil derived from the wood of *Fusanus spicatus* is very largely used medicinally in Australia and other countries. The committee are of opinion that a monograph on this oil might be inserted in the "British Pharmaceutical Codex," so that oil of the quality required by the characters and tests could be ordered for use in Australia and wherever the appropriate authorities considered this variety of oil could usefully replace the more expensive kind obtained from *Santalum album*."

The Imperial Institute.

The Imperial Institute, London, to be reopened to the public on September 15, is undergoing great changes under Lieut.-General Sir Wm. T. Furse, the new director. The exhibition galleries have been closed to the public during the winter for reheating, relighting, and redecorations, and the method of displaying raw products is being greatly modernized. Dioramas and models have been arranged with samples of raw and finished products, transparencies, photographs, pictures, maps, charts, and printed notes, illustrating the subject of the diorama. In the arrangement of the sample rooms members of educational bodies have given assistance, particularly in suggesting the sequence of exhibits corresponding with the most modern methods of teaching.

Topics in the Journals.

Economic Truths.

W. Howard Hazell writes in the *Times Trade Supplement* :—

The industrial unrest which unhappily prevails in this country is due not to one but to many causes. The war effected a vast upheaval, and men and women who had never travelled or seen anything outside their own little social and business circles were carried by it and its consequences to new scenes or distant countries. They realized more clearly than before the possibilities of improving their position, and obtained a new outlook on the future. The high wages they earned during the war, and particularly during the boom after the war, raised their standard of living very considerably. They then formed habits and tastes and they purchased luxuries which formerly were, and now are, quite beyond the reach of those who work in industries in which unemployment is rife and wages have been considerably reduced from the peak of the boom.

When a man's real wages (*i.e.*, the quantity of commodities he can purchase with his wages) are rising, even if the increase be comparatively small, he feels that he is improving his status, and that he can purchase amenities or little luxuries which were formerly unattainable. When the position is reversed and his actual money wages or their purchasing power are reduced, he bitterly resents the change.

When the cost of living index figure has been falling slowly during many months, imperceptibly the worker's standard of living has improved, as his wife has been able to purchase more or better food, and clothing with the same housekeeping allowance. But when the actual reduction in wages takes place, he feels that his standard of living is attacked. His wife can prove to him conclusively that no reduction in the cost of living has occurred at the time the wages are reduced, as she is paying the same prices for food and clothing as she paid the week before, or even a month ago. She has no record of the prices paid 6 or 12 months previously, when the cost of living index figure was higher, and as the household live by the week they disbelieve the official statements about the cost of living. The result is discontent and resentment.

Capitalist System.

Serious unemployment in many industries and the reduction in wages since the boom in most trades are undoubtedly two of the main causes of discontent and unrest. There is, however, another cause more enduring and more subtle, which may lead to serious consequences, and that is the dissatisfaction which has been created with the capitalist system. The extremists, whether they be called Communists, advanced Socialists, or any other name, have preached for years past various doctrines about the capitalist system, and have attributed to it the ills from which the working classes are suffering. The causes of industrial success and failure and the ramifications of international commerce are so complex, that it is extremely difficult to understand them fully. It is easy, however, to put the blame entirely on to the capitalist, and say that his methods are the cause of the present low wages and lack of employment in certain industries. If any simple and incisive statement be repeated month after month and year after year, and if no counter-statement be repeated with equal frequency and vehemence to confute it, it is possible to make the people believe almost any misstatement, however ludicrous it may be.

If this be so, is it not essential that some facts about industrial economics should be placed before the workers in order to combat some of the teaching they have listened to for so long? The economic truths may not be as pleasant as the statements they have heard repeated so frequently. But the laws of economics are inexorable and will not be altered by plausible but unsound arguments.

Some Fundamental Points.

The following are some of the points on which much confusion of thought exists in many minds, and not only in the labour world :—

1.—In modern industry labour, management, and capital are each essential. If any of these three partners in industry be inefficient in quality, or insufficient in quantity, the industry cannot succeed. It is necessary to pay such wages, salaries, or average dividends to each of the partners as will attract them.

2.—If wages or salaries are too low the best men will seek work in other trades or countries, and young men will not willingly enter the industry. If the average dividends on capital are too low it will be very difficult to obtain additional capital for improvements and development, and the industry will languish.

3.—No industry can exist without capital. A costermonger's barrow, a carpenter's tools, a farmer's implements, the wages paid to a worker before the goods he produces are sold, or the stock of goods of a shopkeeper are a few of the forms in which capital is invested in industry. The capitalist believes that by thus investing his savings in trade he will earn more income than if he hoarded his capital in a safe or invested it in Government securities.

4.—Because many people are thrifty and do not spend the whole of their income, and thus become capitalists, great or small, modern industry is possible, and can expand owing to the capital provided by these savings. If everyone spent the whole of his income and if trading concerns did not reserve part of their profits for the development of their business, there could be no expansion in industry to employ the increasing population. The result would be either wholesale emigration or a rapid lowering of the standard of living. The thrifty person, therefore, benefits labour by providing, and risking the loss of, his capital in employing labour.

5.—All trade and business is speculative, and therefore the anticipated dividends on capital must be higher than on Government securities, which are guaranteed by the State. If a man succeed in business his reward is a good dividend on his capital. If he should fail, as many do, he has lost his capital and no one helps him. Even industries that are monopolies or quasi-monopolies and supply necessities are liable to losses or failure. Horse-omnibuses and cabs were ruined by motor-vehicles, gas suffered from the competition of electricity, and telegraphs from telephones. Non-monopolistic trades always run far greater risks than monopolies supplying public necessities.

6.—If there were no profits or interest on capital, no one would invest his savings in industry, or even in Government securities. Men would hoard their savings, and there could be no increase in manufacture or trade which is absolutely essential for our growing population. Hundreds of millions of additional capital are required each year to supply the needs of our expanding trade and population.

7.—Profits, therefore, are essential and beneficial to the workers, as they attract capital to industry, stimulate enterprise, and create more employment.

8.—Industries or businesses which are not making profits are inimical to the interests of both capital and labour. A temporary absence of dividend, or even actual losses, can be borne by capital for a certain time, but if losses be continued for a long period the business will be wound up and the employees will be thrown out of work.

9.—Industries or businesses which are not making profits can be converted into profit-making ones by lowering the cost of production. This change can be attained by two methods :—

(*a*) The simple and speedy mode of lowering wages and salaries, and as in many industries these are the larger part of the expenses, its effect is very marked.

(*b*) The better, slower, and more lasting method of increasing the efficiency of the organization. Labour and management must both work wholeheartedly to attain this end. Higher efficiency in its broadest sense includes better salesmanship, more labour-aiding machinery, and scientific management; and, on the part of labour, higher outputs and a removal of a too stringent demarcation of labour and a modification of rules or customs which unnecessarily increase the cost or hamper production.

10.—High costs are harmful to labour as well as to capital. Greater efficiency will lower the cost of production, and therefore increase the demand for the products and create more employment. When the price of commodities is reduced by greater efficiency labour benefits, not only by increased employment but because the reduced price of the commodities produced will lower the cost of living.

11.—The countries which have the highest wage rates and the highest standard of living are those in which the output per worker and the efficiency of production are the greatest. High wages can only be paid when high production exists. This country stands midway between the low production and low standard of living of the Far East and the high outputs and better standard of living of America. The problem that now faces labour, management, and capital is how to solve the problem of "cutting costs" without reducing wages.

12.—Labour-saving or labour-aiding machinery reduces the amount of manual labour and lowers the cost of production. The lower prices due to the use of machinery greatly increase the demand for the goods. The number of persons employed in the chief industries in this country in which labour saving machinery is employed has not been reduced, but has steadily increased faster than the growth of the population. Labour should therefore encourage, instead of opposing, the introduction of new and improved mechanical methods.

13.—Good profits in a competitive market are a proof of efficiency—*i.e.*, the goods produced or services rendered are supplied in a manner the consumer desires and at a price he is willing to pay. In the same competitive industry there will be many businesses that are not making profits because they are not as efficient as their rivals. The high profits in the successful concerns are the reward of ability and energy, and encourage invention and further development.

14.—The price the consumer is able and willing to pay for all the commodities produced or services rendered is the total sum available to provide wages, all expenses, and profits. The three partners in industry—labour, management, and capital—can only share between them the value of their product, the value being the quantity the consumers wish to obtain, multiplied by the price they are willing to pay. Higher prices reduce the quantity required and *vice versa*.

Workers' Imaginary Grievances.

These fourteen points include certain economic truths which are not known to a vast number of working men and probably to some employers.

Many of the labour leaders realize these facts, which are hard and unpalatable to men in industries that are suffering from the aftermath of the war and the intensified competition from many foreign countries. Some labour leaders who understand these truths have spoken fearlessly on them to the members of their unions, although their opinions have often been received with hostility. Other labour leaders, however, who are apparently ignorant of these economic facts, have repeatedly denied their existence, and while innocently or intentionally misleading their hearers have won praise and applause from their audiences.

If the workers do not understand these matters they naturally have a grievance against their employers, and are led to believe that it is only the selfish obstinacy of those for whom they work which prevents them from giving to the workers much larger wages than those now paid. When a large body of men are thus "disgruntled" and dissatisfied they will not work well and will brood upon their grievances. The result must be a reduced output and friction of various kinds which hamper production in many different ways.

CAMPAIGN OF ENLIGHTENMENT.

If a campaign could be started to enlighten the workers on these various points much good might ensue. Any propaganda which came only from the employers would probably be suspected and disbelieved by labour, but if the support of many of the trade union leaders could be obtained the position would be different. The failure of the general strike has made many trade unionists think that some of the doctrines that have been preached for years are not sound, and in consequence they may be willing to re-examine our industrial problems with a more open mind. Would it not be possible to give in our secondary schools, or even in the senior classes in the council schools, some instruction in the rudiments of economics? If that were done the lads would leave school with some knowledge of those inexorable laws which ultimately will affect them in their work, and guided by that knowledge will act with greater wisdom than if they had not thus been trained for the battle of life.

If labour would carefully examine these problems it would soon realize that prosperity comes to all the partners in industry—labour, management and capital—and *vice versa*. When trade is good profits improve, unemployment decreases, and wages tend to rise when demand diminishes, profits are lessened or disappear, and the workers suffer from short time or unemployment. Low costs and brisk demand are essential to the well-being of labour and capital, and out of the chaos of the last few weeks it is to be hoped that a new spirit will arise, and labour, co-operating wholeheartedly with management and capital, will strive to solve the many problems with which we are faced.

The Cotton Outlook.

Professor John A. Todd, Principal of the Liverpool School of Commerce, writes to *The Englishman* as follows:—

As most of the world's cotton crops are grown in the Northern Hemisphere, our summer is the period which determines the fate of the world's supplies for the season. Owing to the dominant position which the American crop still holds, in spite of the development of "outside growths," anxiety with regard to these supplies centres mainly in the progress of the American crop, and we are now entering upon the usual period of hopes and fears which result from the normally variable climatic conditions in the U. S. Cotton Belt. Every year the position seems to become more critical and more difficult to prognosticate, and this year is unlike its predecessors in one important respect. Prices have fallen in the last twelve months from about 13*d.* to below 9*d.*, as the result of the big crop of 1925, following upon the comparatively big crop of the previous year; and at first it looked as if this would lead to a marked increase of consumption.

In recent months, however, there has been a curious repetition of what has become in recent years, the normal state of the trade. The hope of still another big crop coming has made the cotton trade believe that even lower prices may be expected, and the fear of being left with high priced stocks on hand has made consumers throughout the world continue the policy of hand-to-mouth buying, with the result that consumption has recently been slackening off in America, while Lancashire has found it impossible to abandon the policy of short time, which has of course been accentuated by the difficulties due to the Coal Strike.

The world is, therefore, expecting another big American crop this year, but so far the conditions have not gone very far to justify that expectation. Until June the weather was on the whole too cold and wet, with the result that the crop has not made a good start except in Texas, and although June has brought higher temperatures there has been a considerable amount of rain in the middle and western Belt, which has revived the fears of boll-weevil damage later on. On the other hand the Carolinas have suffered from drought which has only recently been broken.

This year the Crop Reporting Board at Washington has abandoned the first condition report of the season formerly published as at May 25, so that the June 25 report (published on July 2) is the first of the season. Up to that date (as formerly) nothing is available but private estimates with regard to the first essential in all crop calculations, namely the acreage. Ever since 1924 the acreage has been steadily rising, and last year, according to the latest revised figures, 48,090,000 acres were "planted and in cultivation as at June 25". This year the general expectation was a slight reduction, say to 47½ millions, but the Bureau's estimate is no less than 48,898,000 acres!

THE COTTON BUREAU REPORT.

With regard to the condition reports, the general expectation was expressed in an average figure of 76.5 per cent. but the Bureau's condition figure is only 75.4 per cent. Their figure of the indicated crop published with each Bureau Report (15,635,000 bales this time) is merely an arithmetical interpretation of the present condition of the crop, but this year they have supplemented this by publishing a "range" figure indicating the possible limits above and below this figure which the crop might attain if the conditions for the remainder of the season were equal to the best or the worst of the last five years. This as it happens is a very wide range, and these limits are represented by the figures of 16,294,000 bales and 13,726,000. Apparently, therefore, the prospects of the American crop this year are, at the best, not much better than last year, which was 16,086,000 bales.

It is too soon yet to make anything but a guess as to the other prospects of crops. The

Indian crop is entirely dependent on the monsoon which has so far been rather poor. The Egyptian crop is apparently making satisfactory progress, and inspite of the Government's order for restriction of acreage the area is expected to be about the same as last year, with probably less Sakel and more of other varieties. In the Sudan, however, the Gezira will this year derive the full benefit of the Makwar Dam, and if the quality of the crop can be maintained on the same level as last year, this should mean a very useful addition to the supply of the best Egyptian cotton.

The real question this year is the probable effect of the lower level of prices on outside growths, and especially on the Empire crops which have made really excellent progress during the last few years of high prices. That development will certainly be checked by the passing of "Shillong cotton," but to what extent? The answer involves a detailed consideration of the conditions in every area, but briefly the guess may be hazarded that Australia, where the crop is largely produced by white labour, will probably feel it most, while Nigeria and Uganda, where the crop is grown by native small holders, will still have a sufficient margin to make the crop profitable. In South Africa generally, including Rhodesia, the position will probably be something between the two. But in all these pioneer fields a great deal will depend on the quality of cotton they can produce and the premium it will command over ordinary American cotton. In India, too, the question of quality is important. In recent years the proportion of the crop which was something approaching American length of staple has increased enormously, and they are now producing a crop of about 2 million bales of 1 inch and upwards. As for other fields, Russia made a remarkable recovery last year which should be continued this year, and in China the conditions can hardly be worse than they have been recently.

SATISFACTORY PROSPECTS.

On the whole, therefore: the prospects of the world's supply this year are fairly satisfactory, but the whole question still turns on the fate of the American crop. If this year for the third time in succession the weevil proves comparatively harmless and a good crop is made, there will be some reason for hoping that we have really seen the worst of the weevil damage, and that the terrible conditions of 1921 to 1923 are not likely to be repeated; but until that question is answered the position of the world's cotton supplies will not be assured, and we cannot expect a settled condition of affairs in regard to consumption. There is no doubt that the world can easily take all the cotton it can grow—at a price—but whether that price is to be in the neighbourhood of 8*d.*, or a shilling per lb. is still largely dependent on the weevil.

Indian Wheat.

In the course of an interesting letter written to *The Statesman*, Mr. A. G. Watts of Bhatinda says:

It is certainly a move in the right direction to improve the present system of handling and storing wheat in India. Some system of bulk handling and silo storage to increase the popularity of Indian wheat in Europe is necessary. Europe would be pleased to pay a higher price for wheat that has passed through a silo and arrived in bulk as it would have had a preliminary cleaning to remove dust. The large stones and other rubbish, which mysteriously find their way into cargoes of wheat, are not mixed in by the farmer but by the many middlemen that are in the wheat trade. The saving of cargo freight on this rubbish would average easily 5 per cent and as all large buyers of wheat in Europe store in bulk silos for convenience, time and labour would be saved. If wheat could be brought straight from the farmer and stored in silos Europe would see cleaner wheat than ever it had seen before from India. While in England a few years ago several large buyers of Indian wheat spoke to me about this admixture of rubbish. Many thought it was caused through old-fashioned harvest methods. But I informed them this was not so. One large miller visiting the Punjab section in Wembley exhibition was astonished to see such fine clean samples and invited the gentleman in charge to visit his mill and see the actual delivery of Indian Punjab wheat. If silos were adopted at the large ports of exports this rubbish would be extracted, consequently saving shipping freight.

I have been handling wheat for the last 25 years, and the last ten in India, and all the wheat I have handled has passed through silos. All the wheat at present in India is stored in bulk, some in pits, some in mud rooms and others in small mud and wooden built rooms. But the advantage of storage in a properly built elevator or silo is the slight cleaning it gets before storage, removing the dust and large impurities, also giving to the wheat a draught of cool air. Also if to be stored for any length of time, the wheat can be turned over into different bins and subjected to further draughts of air. If this is done it will considerably minimize the breeding of weevils which is the worst trouble in the storage of Indian wheat. The present system of wheat storage in India generally breeds weevils after 8 months' storage which is a considerable loss and I have known deliveries of weevilled wheat up-to 20 per cent. I certainly think a trial elevator should be built in such a place as Karachi for Punjab wheat and one in Calcutta for U. P. wheat for export and gradually extended to the different large mundies. The saving in bags alone would be tremendous. As there is plenty of wood in India I should prefer the larger part built in wood. There are two or three firms in England that have great experience in building this kind of elevators and have built them all over the world and the working of them is very simple. In fact I would choose 50 men in our own place capable of working them. Bulk wagons would be required with extra large lock and I am sure the farmer would gradually appreciate the system. If this system is brought before the Agriculture Commission it would interest them to visit some large up-to-date flour mills in India and see how wheat is handled before being stored, how the different kinds of rubbish are removed, and how the wheat is automatically weighed as in up-to-date mills in Europe.

Will Malaria Ever be Banished?

The prevention of malaria is a subject of supreme importance for the whole of the Tropics. Malaria is perhaps the most ubiquitous of all maladies in warm countries, and persecutes humanity in some of the most beautiful areas of the world. It used to kill, not

merely render sick, more than a million persons in India alone, according to an old official estimate; and we can only infer the prevalence of the disease in Africa and tropical America.

The disease itself does not show a high case-mortality, but persons who once become infected with the malaria germ are apt to remain infected for months or years.

The disease, says Sir Ronald Ross in the *Daily Mail*, is caused by a minute parasite of the blood discovered in 1880 by Dr. A. Laveran. Fortunately quinine is a well-known cure, and the parasites rapidly diminish in numbers while it is being taken. Unfortunately it is by no means easy to persuade patients to take the drug long enough to effect a complete cure; and the result is that local mosquitoes often easily find infected persons from whom they can communicate the parasites to healthy ones.

Pools of Infection.

The fact that mosquitoes can convey the infection from the sick to the healthy was quite conclusively proved in 1898, and since then we have not found any evidence that it may be communicated in any other way.

After the proof was obtained several methods of dealing with malaria were suggested. Robert Koch thought that the best method would be to cure all the patients by assiduous treatment with quinine, so that the mosquitoes would be left without any parasites to carry.

Then many savants suggested wire-gauze protection for all the houses, and veils and gloves for private persons, with the careful use of mosquito netting at night.

My own proposal, with which I have bored everyone, antagonized some, and infuriated a few, has always been, since 1898, that the best way to reduce malaria in many places is by reducing the mosquitoes. The insects breed in pools and streams, and are very vulnerable in the larval stage, when they can be destroyed or driven away by well-known methods.

Since those times our knowledge has increased vastly, especially in connection with the exact species of the malaria-bearing mosquitoes (*Anopheles*) and their habits; and to-day not much more remains to be done than to apply the knowledge gained.

Many enthusiastic experts are now labouring in this line. I recently returned from an excursion to Ceylon to investigate the very troublesome malaria there. The disease costs the Colony a large sum. In one plantation alone it was costing one thousand pounds every month during the malaria season. This expenditure was due to loss of labour, sickness allowances, family allowances, and hospital treatment.

Cost in Lives and Money.

What must be the cost of the disease not only throughout that Colony but throughout the Tropics? I will ask the reader to think what the saving would be if there were no malaria at all in the world—how our dividends would go up and our taxation down! And, above all, how the health of the poor people who live in the Tropics would improve. It has been shown that the death-rate of malarious areas is two and three times that of similar non-malarious areas.

During the last quarter of a century many valuable institutes for the study of Tropical diseases have grown up. Our new institute is to be devoted to research, not teaching; and research is open to the whole world.

Shall we ever be able to banish malaria from the world altogether? I doubt it, but I think now, as I said twenty-seven years ago, that it can be vastly reduced in towns, crowded localities, and special areas such as plantations. Every case saved means so much money saved, besides the saving in illness.

A Critic of Socialism.

Socialism can be attacked from many angles, but there is one angle I never see it attacked from, and that is its extraordinary dreariness. Socialist politics seem to spread an appalling air of gloom over everything they touch Indeed, Socialism is itself a gloomy creed that thrives on gloom. It is one vast "grouse" against everything and its great idea is to depress everybody as much as possible.

The whole scheme of Socialism is one of ordered dulness; and it would, if successful, turn existence into a nightmare of boredom. I know that, in theory, the Socialist is supposed to be the prophet of a brighter world, but he is so invariably overwhelmed with spiteful gloom that I can't help thinking that his ideal world would be a very ghastly place, says John Blunt in the *Daily Mail*.

Psychology All Wrong.

I have noticed before now that the type of humanitarian who loves all mankind usually detests almost every individual, and in the same way the Socialist, who is by way of bringing joy and gladness into the lives of the people, seems unable to bring anything but deadly dulness. There is something fatiguing about Socialist oratory. The more a Socialist talks about the promised Utopia, the more glad one feels that it is only promised.

Moreover, I simply cannot understand why these professors of brotherly love invariably devote the whole of their speeches to denunciation. The gloom with which the Socialist envelopes everything, the contempt with which he speaks of every aspect of ordinary life show clearly enough that Socialism is out of touch with humanity and that its whole psychology is wrong. For mankind is not in that state of perpetual mental jaundice which the Socialist supposes, and people decline to believe that existence is unbearable.

A Soul-Destroyer.

If the Socialist can see nothing but unmitigated gloom, the reason is that Socialism is itself a dismal, soul-destroying doctrine. If the Socialists had their way they would turn the world into a place about as cheerful as a cemetery or a board of guardians' meeting. They never cease grumbling and croaking, and their love for the masses invariably takes the form of abusing anybody who dares to have opinions of his own.

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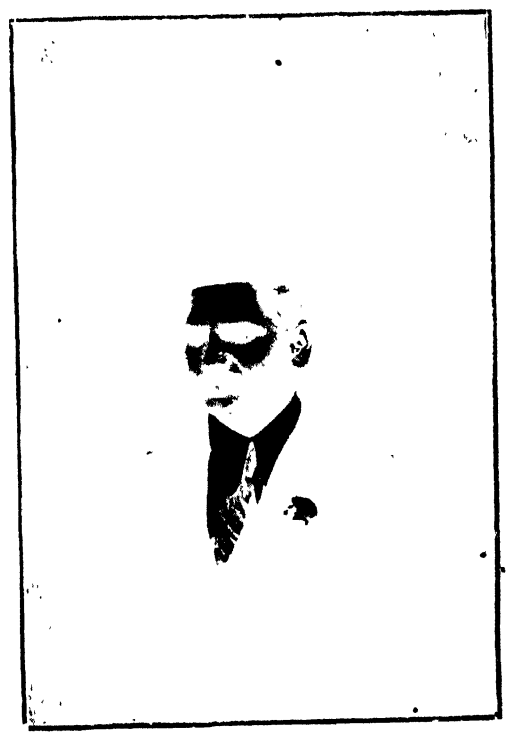
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DECEMBER 1926—SUPPLEMENT.

Manufacture of Hurricane Lamps in India.

With the introduction of Kerosene oil a variety of lamps come into common use but the hurricane type lanterns have been so common that the demand for same is ever on an increasing scale, even though something like twenty to twenty-five lakhs of lanterns are imported into India every year. In every dwelling from the mansion to a cottage the Hurricane Lantern has proved its utility and it is now taking the place of Wall, Table and Hanging Lamps since it has established its claim as a most economical, suitable and safest lamp for all purposes and can be cited as a fine example of how a thing comes into common use, once it has proved its real utility.



Mr. G. P. OGALE, L.M.E.
The Pioneer in Lamp-making in India

But a single well equipped factory has not been established in this country for manufacturing lamps in general, and Hurricane Lamps in particular, though more than a decade has passed since the introduction of such lamps in India. A sort of misconception, therefore, has taken root in the minds of the public that for some reason or other it is not possible to manufacture Lamp burners in this country and even though such a product has been actually placed on the Market by Messrs. Ogale Glass Works Ltd., there are people who cannot believe that it is made in India.

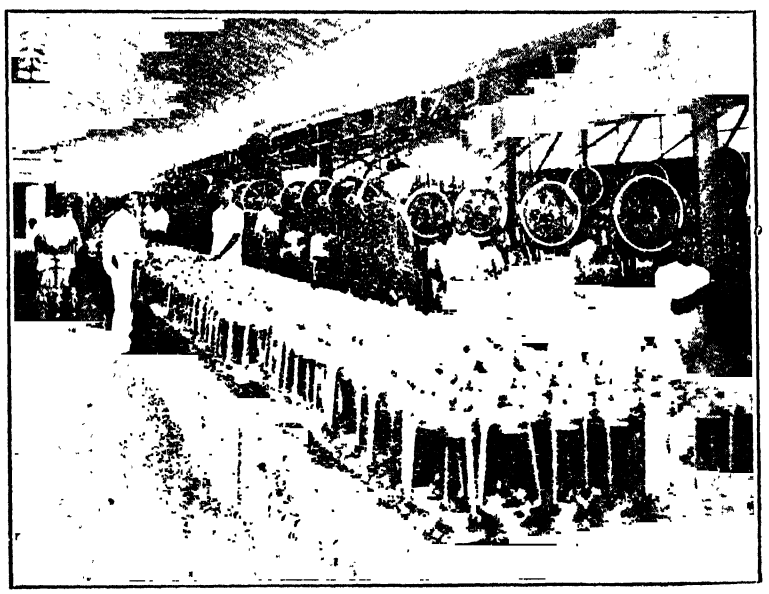
A scheme for manufacturing such Lamps was conceived by the Ogale Glass Works, Ltd., Ogalewadi (Aundh State), a couple of years back and arrangements for the necessary funds were made by increasing their share capital from two to ten lakhs, chiefly with the help and incentive of the Chief Sahib of Aundh, then the whole scheme was very carefully studied by Mr. G. P. Ogale, L.M.E., the Company's Engineer; estimates were worked out and the necessary plant was purchased and erected in a special and up-to-date ferro-concrete building, having a clean cement concrete floor and with special arrangements for allowing ample day-light from all round.

The order in which the machinery has been erected has been so arranged that even a layman going round can very easily follow the various operations from beginning to end, that is, from the cutting of the different parts to the fitting up of the complete lamp, the overhead shafting having been fitted with self-oiling bearings though nearly a hundred machines are working within a length of 200 ft. The whole plant works so smoothly that one can very easily hear the whisper from another.



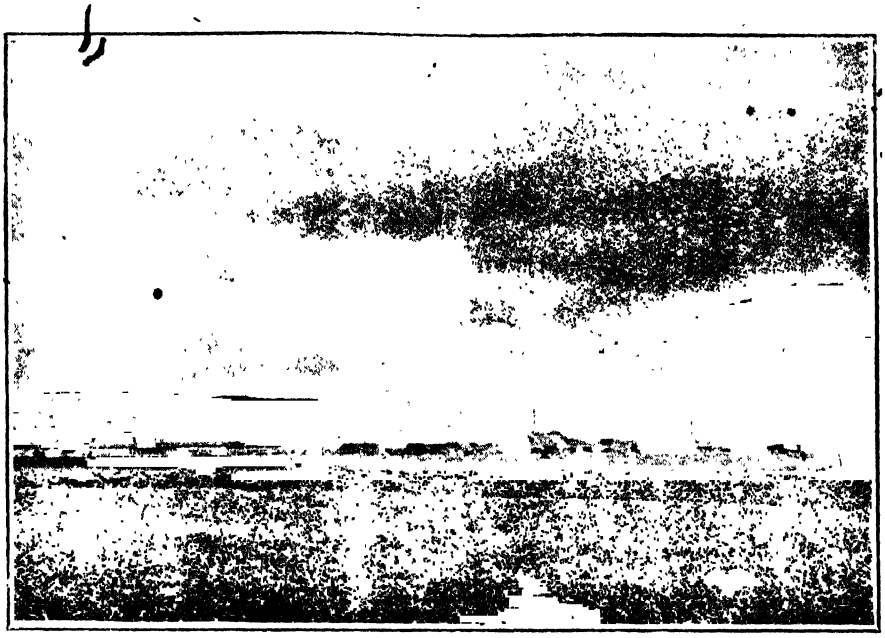
The Repair and Die-making Shop.

Two hundred or more mechanical operations are required to be undergone before a complete Hurricane Lamp, a very simple thing to all outward appearances can be made. The photographs of the Prabhakar Lantern Works on these pages will give some idea of the number of machines used for carrying the various operations such as cutting, drawing, pressing, slotting, turning, beading, folding, trimming, knurling, threading, assembling, pointing, wire straightening, spring making, etc. The wire parts such as the handle, the lever, the ring, the globe guards, etc., are shaped by means of hand devices.



A portion of the Lantern-making Plant.

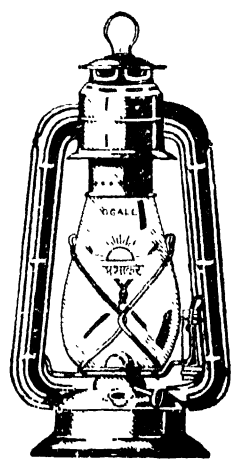
Metal sheets of very uniform thickness are cut into different sizes and pressed and punched in order to make the various parts such as the oil tanks, the columns,



A distant view of the Home of the Prabhakar Lamps.

the thread tunnel with its screwed cap, the burner, the burner cap, the perforated screen, the globe lifting lever, the lever guide, the wire guards, the top spring the smoke funnel, etc. A mention of only the main parts and minute operations are required to be made.

The tank bottom, the side columns and the lever guide in Prabhakar Lamps are joined by seaming and by pressing them together mechanically. In some places electric soldering is made use of to give the parts greater strength and as an additional precaution against leakage. But that none of them are joined merely by soldering as a speciality in the Prabhakar Lamps.



The Prabhakar Lantern.

The motive power is supplied by a 100 BHP Gas Engine. Throughout the manufacturing process mechanical aid has been taken advantage of wherever possible and no scope whatsoever has been left to the individuality of the workmen.

Messrs. Ogale Works have fully grasped the need for a mass production and in order to achieve it they have equipped their Lantern-shop with a separate machine for each major or minor operation in the manufacturing process and immediately the plant is capable of manufacturing a thousand lamps per day when worked to its fullest capacity.

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